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## PROTECTION OF WATER SUPPLIES.

**A PUBLIC PLEASURE RESORT CLOSED BY ORDER OF THE COURT BECAUSE OF DANGER OF POLLUTING A MUNICIPAL WATER SUPPLY.**

Snipsic Lake is the source of water supply for the city of Rockville and the town of Vernon, Conn. An owner of land on the lake established a public pleasure resort. An injunction was granted by the county court under a State law, compelling him to close the resort because it was shown that the resort was liable to pollute the water supply. He was awarded damages for the loss sustained by him in not being allowed to use his property for a lawful purpose.

The opinion of the Supreme Court of Errors of Connecticut affirming the judgment is published in this issue of the Public Health Reports, page 2031.

## POLIOMYELITIS (INFANTILE PARALYSIS).

**STATE HEALTH OFFICERS SECURING INFORMATION NECESSARY IN EFFORTS TO CONTROL THE DISEASE.**

The State Board of Health of Minnesota has issued a circular on the control of poliomyelitis (infantile paralysis), the first paragraph of which reads as follows: "Health officers and physicians are hereby notified to report all cases and suspected cases of poliomyelitis (infantile paralysis) by telegraph or telephone to the division of preventable diseases, state board of health, university campus, Minneapolis."

Physicians of the State of Washington have been requested to report cases of poliomyelitis to the State board of health by telegraph (collect), in addition to the usual postal card report.

The State Department of Health of Virginia has also requested physicians to report to it promptly all cases of poliomyelitis.

**POLIOMYELITIS (INFANTILE PARALYSIS).****INFORMATION FOR PARENTS, PHYSICIANS, AND HEALTH OFFICERS.**

The following information has been issued in the form of a circular by the New York State Department of Health:

**General Statement.**

Poliomyelitis is a disease of the spinal cord or its extension into the brain. It is manifested by fever, sometimes convulsions, digestive disturbances, vomiting and diarrhea, and followed by a weakness or paralysis of one or more groups of muscles, usually of the arms and legs. There are sometimes symptoms resembling acute meningitis, including rigidity of the neck. There may be difficulty in swallowing. Pain and soreness along the spine and the affected muscles are frequently present. The onset may be very sudden or gradual. Infants and young children are most often affected; older children and adults less frequently so.

The disease is caused by one of the smallest organisms known. It can not be detected with the ordinary microscope. However, when these organisms are grouped together the mass may be clearly seen.

The disease is contracted by a person susceptible to it receiving into the nose and throat infected discharges from the nose, throat, bowels of persons ill with the disease, convalescent from it, or who are healthy "carriers" of disease germs by direct contact or through the intermediary of fingers, household utensils, handkerchiefs, towels, and possibly household pets and flies.

When the organism has once gained access to the nose or mouth it grows rapidly and soon invades the brain or spinal cord through small passages in the upper part of the nasal cavity. The walls of the blood vessels supplying the nerve cells are invaded, their caliber constricted, and the blood supply of the nerve cells partially or wholly cut off, resulting in the degeneration of the nerve cells and the corresponding nerves, together with paralysis of the muscles through which the nerves are distributed.

The infective agent is quite resistant to carbolic acid, which is therefore of little or no use in disinfection.

**Directions to Parents and Caretakers.**

1. When the symptoms above described appear in a person of your household summon a physician immediately. Keep other members of the family away from the affected person.
2. Protect your family by sending the patient to a hospital, if the family physician approves of this course. If hospital accommodations are not available, the patient *must* be isolated at home, as your physician and the health officer will direct.

3. If the child is attending school, you should notify the principal of the school. If the child has recently been to Sunday school notify the Sunday-school teacher so that she can inform the parents of other children that they may have been exposed. If the patient is employed, the employer should be informed.

4. Complete isolation of the patient for six weeks must be maintained and those who have been in contact with the patient must be isolated and under observation for two weeks.

5. The proper disposal of the discharges from the nose and throat not only of the patient but of all in isolation is of the greatest importance in preventing the spread of the disease. Pieces of cloth should be provided in abundance to receive all such discharges. The cloths after using should be placed in a paper bag and subsequently burned. Treatment with carbolic acid is not effective. Excreta from the bowels must also be treated with boiling water for 15 minutes before being deposited in a privy vault. The hands of attendant should be frequently washed with soap and water and thoroughly rinsed.

6. It is often difficult to keep children in isolation during convalescence unless something is available to occupy their minds. A pamphlet on the subject "Amusements for convalescent children" may be obtained from the State department of health upon receipt of a 2-cent stamp.

7. Physicians and health officers are required by law to perform certain duties. In the interest of public health parents should give every possible assistance and not cherish ill feelings toward them on account of inconvenience and discomfort which may be caused by quarantine measures.

#### Directions to Physicians.

1. Physicians must promptly report cases of poliomyelitis to the local health officer. Blanks for this purpose will be supplied by the State department of health or by the local health authorities.

2. During the period of observation of a *suspected* case the patient must be isolated in the same manner as for a well-defined case of poliomyelitis. The patient must be isolated for six weeks and those in contact with the case for two weeks.

3. Special instructions must be given to the caretaker in regard to the disposal of excreta from mouth, nose, and bowels.

4. On the day before release of any individual from quarantine require the throat and nose to be thoroughly cleaned with normal salt solution by gargling, and spraying into the nose several times during the day. It may be a good practice to do this occasionally during quarantine, as washings of this kind from "carriers" have been found to contain the infectious agent. These washings should therefore always be boiled before disposal.

5. The infectious agent is said to be readily destroyed by 2 per cent solution hydrogen peroxide, menthol, and corrosive sublimate. The temperature of 45°-50° C. for one-half hour will kill the organism.

#### Duties of the Health Officer.

1. The health officer must forward to the State department of health within 24 hours of the time of its receipt from the physician the official card reporting a case of poliomyelitis.

2. The health officer must distribute circulars on poliomyelitis issued by the State department of health or local health authorities, to families in which the disease exists, and also to other persons or families living in the house.

3. A placard must be posted on the house, apartment, or room occupied by the patient, stating the existence therein of a communicable disease.

4. Patient must be isolated for a period of at least six weeks, and those in contact with the patient for a period of two weeks.

5. After isolation by the health officer, no patient shall be removed from the place of quarantine without permission from the health officer.

6. In the presence of an outbreak of several cases, attendance of children at public gatherings should be prohibited. Require special care in the cleaning of glasses and other containers used by the public at soda-water fountains, picnic grounds, and elsewhere.

7. In the presence of an outbreak the services of a public-health nurse should be obtained (1) to make house to house investigations, to find early and missed cases; (2) to assist in the care of cases especially in need; and (3) to inspect and report the observance of quarantine. The department will be glad to assist in supplying such a nurse.

8. Milk bottles or other containers should not be left at the house in which a case of poliomyelitis exists, but if so left, they should not be removed until thoroughly cleaned and scalded with boiling water under the supervision of the health officer.

9. Camps and summer homes for children coming from regions where poliomyelitis is prevailing should be frequently visited by the local health officer. The children should be confined to their own grounds for a period of three weeks, after which if no cases develop they may be allowed greater liberty.

All milk bottles and large containers should be scalded with boiling water before leaving the camp.

Superintendents of camps should be especially instructed to report immediately any suspicious cases to the health officer.



**PELLAGRA.****THE VALUE OF THE DIETARY TREATMENT OF THE DISEASE.**

By J. R. RIDLON, Passed Assistant Surgeon, United States Public Health Service.

This report is based on observations upon 58 patients suffering with pellagra who came under treatment in the United States marine hospital, Savannah, Ga., from February, 1914, to September, 1915.

These patients were admitted under authority of act of Congress dated March 4, 1911. Only those patients were admitted who were found free from complications such as tuberculosis, syphilis, or any affection of the heart, lungs, or kidneys.

Forty-six of the patients came from Georgia, 10 from South Carolina, 1 from Florida, and 1 from Alabama.

Occupations were as follows:

Farmers.....	22	Chauffeur.....	1
Cotton-mill employees.....	7	Sawmill employee.....	1
Carpenters.....	6	Blacksmith.....	1
Schoolboys.....	3	Schoolteacher.....	1
Storekeepers.....	3	Motorman.....	1
Traveling salesmen.....	2	Livery-stable employee.....	1
Quarrymen.....	2	Physician.....	1
Lumber-camp employees.....	2	Engineer.....	1
Painter.....	1	Plumber.....	1
Seaman.....	1		

*Race.*—Fifty-six of the patients were white males and 2 colored males.

*Age.*—The distribution in regard to age was as follows:

Age.	Number of cases.	Age.	Number of cases.
10 to 14.....	5	40 to 49.....	15
15 to 19.....	1	50 to 59.....	10
20 to 29.....	10	60 to 69.....	6
30 to 39.....	11		

*Duration of disease.*—The duration of the disease before coming under treatment is indicated by the number of previous attacks or recurrences, which in most instances occurred at practically yearly intervals.

During their first attack 26 patients came under observation, 14 during the second attack, 14 during the third attack, 1 each during the fourth and fifth attack, and 2 during the sixth attack.

**SYMPTOMS.**

*Type of disease.*—While in most cases the patients presented at the same time symptoms referable to the skin, alimentary tract, and nervous system, they may be divided in regard to the predominating symptoms as follows:

Twenty-three presented predominating symptoms referable to the nervous system, 25 to the alimentary tract, and 10 to the skin.

#### Symptoms Referable to the Skin.

A great variety of symptoms were noted in these cases.

All patients either actually presented more or less marked skin manifestations or gave histories of having had a dermatitis prior to admission.

In 81 per cent of the patients, skin manifestations varying from a well-defined scaliness to severe moist lesions were present. In order of frequency dermatitis appeared in the following sites: Dorsum of hands, forearms, face, neck, feet and legs, scrotum, chest, abdomen, and thighs.

A seborrhœic condition of the skin of the forehead and nose was noted in 12 patients.

Dermatitis essentially of a moist character with the formation of bullæ was observed in three patients. One of these patients died and two recovered.

#### Symptoms Referable to Alimentary Tract.

The following symptoms referable to the alimentary tract were noted:

Symptoms.	Number of cases presenting symptoms.	Symptoms.	Number of cases presenting symptoms.
Redness of tongue.....	34	Flatulency.....	16
Fissured tongue.....	30	Nausea.....	5
Sore mouth.....	28	Vomiting.....	2
Salivation.....	8	Anorexia.....	20
Pain in epigastrium.....	32	Diarrhea.....	28
Burning in stomach.....	26	Constipation.....	9

The redness of the tongue was of varying intensity and accompanied by denudation of epithelium in the severe cases. In addition to the redness, fissuring of the tongue was of common occurrence. Pain in the epigastrium and burning in the stomach were symptoms often present at the same time. Diarrhea was observed in 48 per cent of our cases and nearly all gave a history of having short periods with looseness of the bowels previous to coming under treatment. The number of stools a day varied from 4 to 30. This troublesome symptom almost invariably disappeared under dietetic treatment without the aid of drugs.

## Symptoms Referable to Nervous System.

The following symptoms referable to the nervous system were noted:

Symptoms.	Number of cases showing symptom.	Symptoms.	Number of cases showing symptom.
Burning of the feet.....	42	Headaches.....	9
Burning of the hands.....	11	Mental confusion.....	21
Burning in the rectum and about the anus.....	15	Mental depression.....	25
Prickling sensations.....	7	Dementia.....	2
Dizziness.....	40	"Nervousness".....	11
Dimness of vision.....	20	Delirium.....	3
Pain in the legs and feet.....	30	Hallucinations.....	5
Pain and tenderness in the back of the neck.....	6	Coma.....	2
Insomnia.....	10	Spastic paralytic gait.....	4
Numbness of feet and hands.....	11	Contractures of hands and feet.....	2
Chilly sensations.....	6	Knee jerk exaggerated.....	12
Muscle cramp.....	2	Knee jerk absent.....	3
		Muscular weakness of legs.....	50

Burning of the feet was present in 72 per cent of cases and was one of the last symptoms to disappear. It has been a common occurrence for patients to sleep with their feet from under the covers to cool them.

Dizziness, sometimes described as a swimming in the head and often accompanied by staggering, was present in 69 per cent of cases and proved a most troubling symptom.

Dimness of vision, occasionally accompanied by diplopia, was present in 34 per cent of cases. Patients often described this as the presence of a skim or haziness before the eyes.

Pain in the legs and feet was present in 52 per cent of cases and often of intense severity. It has been found one of the most annoying symptoms.

The mental depression of pellagra, often accompanied by confusion of the mental faculties, is one of the most distressing symptoms. The patients in many instances have been shunned on account of an unreasoning fear of contagion and are plunged into the depths of gloom.

A comatose condition of short duration was observed in two patients. During the attack they could not be aroused and afterwards had no recollection of what took place during this period.

Four patients presented a gait of a spastic paralytic type; two of these eventually recovered from the condition.

Two patients showed contractures of the hands and feet, with muscular atrophy. One of these patients died and the other was discharged, able to walk and showing marked improvement.

Muscular weakness of the legs was present in 86 per cent of cases.

## General Symptoms.

Increased pulse rate of from 90 to 108 was observed for recurrent intervals of two days or more in 9 patients. These instances of tachycardia were not accompanied with rise of temperature and do not include terminal cases.

Three of these patients had predominating skin symptoms, two of them being of a moist variety, two had predominating gastrointestinal symptoms, and four had predominating nervous symptoms.

Tachycardia was accompanied by enlargement of the thyroid in one instance.

*Temperature.*—Only four patients presented a noticeable rise in temperature. Three of these presented a moist dermatitis; one of the three died. The fourth was a very severe case admitted with paraplegia and two bed sores.

*Loss of weight.*—Nearly all patients gave a history of loss of weight during their illness and were underweight at the time of admission. Only a few of the mild and convalescent cases considered that they were at their normal weight when admitted.

In four patients there was noted the presence of a depression or caving in near the lower end of the sternum at the junction of the ribs and costal cartilages. An X-ray examination<sup>1</sup> demonstrated in two of these patients a condition of softening of the sternal ends of several ribs, with a diminution in the amount of bone salts. This halisteresis is considered analogous to the conditions found in rickets and scurvy, diseases which are admittedly due to a food deficiency.

*First symptoms.*—In taking histories an effort was made to determine the first symptom making its appearance and calling the patients' attention to his condition.

First symptom.	Number of patients.	First symptom.	Number of patients.
Dermatitis.....	33	"Indigestion".....	3
Diarrhea.....	6	Dimness of vision.....	3
Weakness of legs.....	4	Dizziness.....	1
Soreness of mouth.....	3	Not known.....	2
Burning of stomach.....	3		

<sup>1</sup> X-ray examinations made and interpreted by Dr. Eugene R. Corson, Savannah, Ga.

The occurrence of the first symptoms by months was reported as follows:

Month.	Number noting first symp- toms.	Month.	Number noting first symp- toms.
January.....	4	August.....	0
February.....	4	September.....	3
March.....	7	October.....	4
April.....	12	November.....	2
May.....	12	December.....	1
June.....	3	Not known.....	2
July.....	4		

#### CASES GIVEN DETAILED CONSIDERATION.

Fifty-one patients are reserved for detailed consideration after excluding seven who remained under treatment less than two weeks.

Of these seven, five were convalescent upon admission, one remained under treatment only one day and one died on the third day after admission. This patient was a colored boy of 12 years, who was admitted in a hopeless condition with an extensive moist dermatitis and a temperature of  $39.4^{\circ}\text{C}$ . Dermatitis involved the dorsum of the hands, the forearms, elbows, neck, anterior surface of chest and abdomen, prepuce, scrotum, perineum, inner surfaces of the thighs, dorsum of feet, ankles and lower third of anterior surfaces of the legs. He had a severe stomatitis, vomiting, and diarrhea with involuntary movements.

These seven patients are omitted, as it is manifestly unfair to draw any conclusions as to results of treatment.

*Course.*—The 51 cases are divided into three classes according to the grade of severity of the disease. Six were considered mild, 14 moderate, and 31 severe.

Those are considered mild which showed symptoms practically confined to the skin with little derangement of the alimentary tract.

The moderate cases are those which, in addition to the skin symptoms, showed also moderate involvement of the alimentary tract and nervous system. Constitutional symptoms, as loss of weight and weakness, were not marked.

The severe cases all showed marked involvement of the alimentary tract and nervous system, with marked loss of weight and with weakness.



**Duration.**—The following analysis gives the duration of the present attack before admission to the hospital:

Time.	Mild.	Moderate.	Severe.	Total.
Less than 1 month.....	2	3	7	12
From 1 to 2 months.....	2	5	6	13
From 2 to 3 months.....	1	2	4	7
From 3 to 4 months.....	0	0	3	3
From 4 to 5 months.....	0	1	0	1
From 5 to 6 months.....	0	0	3	3
From 6 to 7 months.....	0	1	1	2
From 7 to 8 months.....	0	1	2	3
From 8 to 9 months.....	0	0	2	2
From 9 to 10 months.....	1	1	1	3
From 10 to 11 months.....	0	0	1	1
From 11 to 12 months.....	0	0	1	1
From 12 to 13 months.....	0	0	1	1
From 13 to 14 months.....	0	0	1	1

#### Treatment.

Since October, 1914, in accordance with the suggestions of Surg. Joseph Goldberger, United States Public Health Service, we have come to rely almost exclusively upon the dietary treatment of pellagra and to believe that drugs have a very small place in the treatment of this disease.

Goldberger<sup>1</sup> and his associates from their studies conclude: First, "That pellagra is not a communicable (neither infectious nor contagious) disease, but that it is essentially of dietary origin; second, That it is dependent on some yet undetermined fault in a diet in which the animal or leguminous protein component is disproportionately small and the nonleguminous vegetable component disproportionately large; and third, That no pellagra develops in those who consume a mixed, well-balanced, and varied diet, such, for example, as that furnished by the Government to the enlisted men of the Army, Navy, and Marine Corps."

**Diet given patients.**—Following out the ideas embodied in the foregoing conclusions and with the purpose of providing a diet relatively rich in the animal and leguminous protein component and relatively poor in the nonleguminous vegetable component, the following diet has been used in the treatment of pellagra:

Patients received 1 quart of fresh milk a day, two eggs, poached or soft boiled, a day; wheat bread three times a day, butter, one-half ounce, three times a day; coffee once a day if desired; fresh, lean meat three times a day, either beef, mutton, chicken, veal, or pork; oatmeal or wheat once a day; dried beans or peas either baked or boiled or made into a soup, once a day; one other vegetable, either fresh legumes, turnips, carrots, onions, potatoes, or cabbage, once a day; stewed fruit three times a week; and rice once a week. In addition

<sup>1</sup>The Treatment and Prevention of Pellagra by J. Goldberger, C. H. Waring, and D. G. Willetts. Reprint No. 228 from the Public Health Reports, October 23, 1914.

the patients were allowed fruit juices or fresh fruit, as apples, oranges, or peaches, in season.

This diet includes a large proportion of the animal and vegetable proteins and there is also a diminution in the proportion of sugars and starches.

We allow no sirup, corn products, or fat white meat (salt fat pork), and no canned vegetables. We have no evidence that these articles in themselves are not wholesome, but from experience have found that alone or in combinations they have commonly formed a conspicuously large portion of the prepellagrous diet.

We do not recommend a strict adherence to this diet in all cases, appreciating that it might well be modified, but it is given in brief as a diet which has been tested and found satisfactory.

We find that patients can digest and assimilate this food, except in rare cases, when it becomes necessary to lessen the proportion of solid constituents. The presence of diarrhea has not ordinarily been sufficient reason for lessening the solid constituents.

*Drugs given patients.*—Of the 31 severe cases, 18 received drugs, exclusive of laxatives, which have been lauded as being of benefit in pellagra. The list of these drugs includes as tonics and alteratives, Fowler's solution, elixir of iron, quinine and strychnine, sirup of hypophosphites, potassium iodide, and Blaud's pills; for gastrointestinal symptoms, bismuth subnitrate, lead and opium pills, pepsin, charcoal, and dilute hydrochloric acid.

Fowler's solution in small doses was used by the largest number of these patients, namely, 14.

There is no evidence that any of these drugs exerted any appreciable effect upon the duration of the disease and their use did not lead to any very marked improvement in individual symptoms.

For the skin lesions we have found normal salt solution suitable as a moist dressing, and an ointment containing bismuth subnitrate and vaseline useful to soften a roughened skin area.

#### RESULTS.

Of the 51 patients under detailed consideration, 48 were discharged improved, 2 were not improved, and 1 died. The fatal case was admitted in a hopeless condition. The patient had been confined to bed for six months, was extremely emaciated, and partially paralyzed from the waist down. He had contractures of the hands, knees, and feet, and two bed sores. On the day of admittance he had 27 involuntary bowel movements. He had a severe stomatitis, diarrhea persisted, and he ran an intermittent temperature course until his death on the 27th day after admission. A few days before death ecchymotic spots appeared beneath the skin of his hands.

### **Histories of Patients Discharged as Not Improved.**

The histories of the two patients discharged as not improved are given somewhat in detail:

Patient No. 62, white, male, age 21. Had first attack of pellagra in October, 1912, and second in September, 1913. Was a patient in this hospital from November 11 to December 17, 1913. At that time had an attack of moderate severity with skin and gastrointestinal symptoms. He had dermatitis of the hands and feet, red tongue, sore mouth, and slight diarrhea, but no mental or marked nervous symptoms. Skin cleared up and gastrointestinal symptoms disappeared under treatment. He was discharged with no symptoms and showing a gain in weight of 8 pounds. Third attack appeared in March, 1914, and he was readmitted to hospital April 1, 1914. At that time he had a scaling dermatitis of hands and face and slightly red tongue, but no diarrhea. He complained of weakness, dizziness, occasional headaches, pains in the back of the neck and in the knees, and burning of the feet. He seemed to be improving up to May 6, when he complained of pain and stiffness in his neck and suffered with delusions and hallucinations. On May 7 he became delirious and violent, refused all nourishment, and would not answer questions. The delirium had passed away by May 10, leaving him subdued and quiet, but with his mental faculties very sluggish. He improved somewhat up to May 16, when he became homesick and was taken away. His death was reported two and a half months later.

Patient No. 124, white, male, age 53. Had first attack of pellagra in January, 1913, and second in March, 1914. Admitted April 22, 1914, with scaling dermatitis of hands and face, sore mouth, red and fissured tongue, salivation, flatulency, loss of appetite, diarrhea, and pain in the epigastrium. Was weak and emaciated and spent most of the time lying down. Nervous symptoms consisted of dizziness, severe headaches, pains and soreness in the back of the neck, pains in the legs, and burning feet. While under treatment the skin lesions cleared up, but sore mouth persisted, and diarrhea continued alternating with constipation. Pains in the head and neck increased in severity and from April 22 to May 25 he lost 7 pounds in weight. Loss of appetite persisted and he could not be persuaded to take the proper amount of nourishment. He became homesick and was taken home on May 25, 1914. He was reported as improved at the end of several months.

It is only fair to state that difficulty was encountered with both of these patients in persuading them to actually eat all the food that was given them.

In later cases there has arisen the same difficulty of persuading patients to consume a diet to which they were not accustomed. Many claimed at first that they did not like or could not eat the fresh lean meat, or the milk, or the eggs.

### **Patients Improved by Diet.**

Of the 48 patients classed as improved on discharge, 27 were, to all appearances, cured. Eight presented no symptoms. Subjective symptoms were complained of as follows by the remainder: Nine complained of occasional burning in the feet, three complained of fullness in the head and occasional dizziness. One had pains in the legs, one had muscular cramps, and five complained of slight weakness of the leg muscles.

Classed as to severity, the results were as follows:

Course.	Im- proved.	Not im- proved.	Death.
Severe, 31.....	28	2	1
Moderate, 14.....	14	0	0
Mild, 6.....	6	0	0

Classed as to predominating symptoms, the results were as follows:

Predominating symptoms.	Number.	Im- proved.	Not im- proved.	Death.
Nervous.....	20	17	2	1
Gastrointestinal.....	22	22	0	0
Skin.....	9	9	0	0

Classed in regard to the number of attacks, the results were as follows:

Number of present attack.	Im- proved.	Not im- proved.	Death.
First.....	20	0	1
Second.....	13	1	0
Third.....	12	1	0
Fourth.....	1	0	0
Fifth.....	1	0	0
Sixth.....	1	0	0

Classed in regard to the duration of the present attack before treatment, the results were as follows:

Duration.	Number.	Im- proved.	Not im- proved.	Death.
Less than 1 month.....	12	10	2	0
1 to 2 months.....	13	13	0	0
2 to 3 months.....	7	7	0	0
3 to 4 months.....	3	3	0	0
4 to 5 months.....	1	1	0	0
5 to 6 months.....	3	3	0	0
6 to 7 months.....	2	2	0	0
7 to 8 months.....	3	3	0	0
8 to 9 months.....	2	1	0	1
9 to 10 months.....	3	3	0	0
12 to 13 months.....	1	1	0	0
13 to 14 months.....	1	1	0	0

Classed in regard to the period under treatment, the results were as follows:

Period under treatment.	Number.	Im- proved.	Not im- proved.	Death.
2 to 3 weeks.....	4	4	0	0
3 to 4 weeks.....	5	4	0	1
4 to 6 weeks.....	13	12	1	0
6 to 8 weeks.....	8	7	1	0
8 to 12 weeks.....	10	10	0	0
12 to 16 weeks.....	5	5	0	0
16 to 24 weeks.....	2	2	0	0
24 to 32 weeks.....	4	4	0	0

Of the 31 patients classed as severe, 18 received various drugs as medication directed essentially to pellagra.

Nine received only a placebo, given three times a day, containing in each dose 3 drops of compound tincture of gentian with 30 drops of aromatic elixir.

Four received no medication.

Classed in regard to treatment the following results were obtained in the 31 cases regarded as severe:

Treatment.	Number.	Im- proved.	Not im- proved.	Dead.
Received medication.....	18	15	2	1
Received placebo.....	9	9	0	0
None.....	4	4	0	0

Taking the 31 patients more in detail, there were 18 who received medication, 15 of whom were improved, 2 of whom were not improved, and 1 of whom died.

The histories of the two who were not improved and the one who died have been previously given. (See pp. 1985-1986.)

For the purpose of comparison a brief synopsis is given of the 15 patients receiving medication who improved and the 13 who received only the placebo or no medication.

#### Synopsis of Patients Receiving Medication.

The group of patients receiving medication is taken up first.

The diet provided for both groups differed only in that the former group received 1 pint of milk and 1 egg more a day than the latter group, and that the latter group received dried legumes daily while the former group received them only once a week.

Patient No. 137, white male, age 53. Had first attack of pellagra in September, 1912, second in May, 1913, and third in February, 1914. Admitted February 28, 1914, with scaling dermatitis of hands, sore mouth, burning in stomach, loss of appetite, and diarrhea. Was weak and suffered from dizzy spells, pains in the knees, burning of feet, and mental depression. Dermatitis cleared up readily, but otherwise improvement was rather slow, appetite remaining poor. On May 10 there developed an attack of herpes zoster on the right chest, lasting about two weeks. While under treatment he received for varying intervals tincture nux vomica, dilute hydrochloric acid, elixir of iron, quinine, and strychnine, Fowler's solution, and potassium iodide. He was discharged on June 8 in very good condition, showing a gain of 4 pounds. Skin and gastrointestinal symptoms had cleared up, but there remained occasional pains in the knees and burning of the feet and slight dizziness. Fourteen days later, after having tramped about 200 miles, he was readmitted with dermatitis, diarrhea, weakness, dizziness, pains in the knees, and burning feet. He again improved, dermatitis cleared up and he gained in strength; also gained 2 pounds in weight. He left the hospital on July 15 against advice.

Patient No. 151, white male, age 38. Had first attack of pellagra during March, 1914; was admitted May 24, 1914, with dermatitis of hands, wrists, face, and neck,



red and fissured tongue, pain in the epigastrium, flatulency, diarrhea, and burning about the anus; also complained of weakness, dizziness, pains in the legs, burning of feet, headaches, and pain in the back of the neck. He was mentally depressed and suffered from insomnia. He received Fowler's solution and bismuth subnitrate. He made a good recovery and was discharged July 3, 1914, having gained 11½ pounds and complaining only of occasional burning of the feet.

Patient No. 167, white male, age 37. Had first attack of pellagra in February, 1914; was admitted May 27, 1914, with scaling dermatitis of hands, forearms, face, and neck, red and fissured tongue, pain in the epigastrium, burning at anus, and diarrhea. He was extremely weak and emaciated, having lost 40 pounds during the attack. He complained of dizziness, burning of the feet, dimness of vision, and pains in the legs. He received Fowler's solution and bismuth subnitrate for the diarrhea. He made a rapid and steady improvement and was discharged on July 23, having gained 22 pounds and with no evidence of pellagra except an occasional burning of the feet and hands.

Patient No. 168, white male, age 62. Had first attack of pellagra in the fall of 1912 and second in the spring of 1914. Admitted June 13, 1914, with slight scaling dermatitis of hands, face, and neck, salivation, pain in the epigastrium, and diarrhea. He was mentally depressed and apathetic and mentally confused. He was able to walk but a short distance on account of weakness and dizziness. He complained of pains in his knees and burning of the feet and about the anus. While in the hospital he received Fowler's solution, bismuth subnitrate, and thymol for a hookworm infection. He made a steady improvement until his discharge on July 25, 1914. Dermatitis had cleared up and he had gained in strength and had gained 15 pounds in weight. He still complained of occasional pains in the knees and dizziness. His mental condition had much improved and his gastrointestinal symptoms had disappeared.

Patient No. 175, white male, age 25. First attack of pellagra in fall of 1913. Admitted February 9, 1914, with scaling dermatitis of hands, red tongue, sore mouth, and diarrhea. Could walk only a short distance on account of weakness and dizziness and suffered with pains in the head and burning of the feet. He received elixir of iron, quinine, and strychnine, Fowler's solution, and thymol for a hookworm infection. After this he made a steady and marked improvement, gaining 32 pounds in weight, and was discharged on August 16, 1914, with no symptoms and apparently cured.

Patient No. 177, white male, age 27. During the spring of 1907 had dermatitis of hands and feet and remained in poor health until May, 1914, when he developed well-defined symptoms of pellagra. Admitted July 31, 1914, with severe dermatitis of hands and slight scaling on forehead. Tongue was red and fissured, mouth was sore; he complained of soreness across the abdomen and had diarrhea; was weak, emaciated, and anemic, depressed and despondent, and complained of dizziness, pains in the legs, and burning of the feet. He received Fowler's solution and two thymol treatments for a heavy hookworm infection. On August 25, 1914, he became homesick and left the hospital. At this time he was showing improvement. Dermatitis had nearly cleared up and nervous and gastrointestinal symptoms were improved. He gained one pound in weight.

Patient No. 178, white male, age 58. Had first attack of pellagra in April, 1914, and was admitted August 2, 1914, with slight scaling dermatitis of hands, red and fissured tongue, sore mouth, diarrhea, flatulency, and soreness across abdomen. Nervous symptoms consisted of pains in legs, burning of feet and hands, headaches, pricking sensations, and pain in the back of the neck. He was weak and suffered from insomnia. He received Fowler's solution and bismuth subnitrate. He improved and was discharged September 8, 1914. Dermatitis had disappeared and he had gained 5½ pounds. Gastrointestinal symptoms had much improved, but he still complained of occasional pains in the head and burning of the feet and hands.

Patient No. 179, white male, age 56. Admitted April 25, 1914, about three weeks after first symptoms of pellagra. Had dermatitis of hands, reddened tongue, sore mouth, pain in the epigastrium, and diarrhea. He was weak and complained of pains in the legs and burning of the feet. Dermatitis cleared up quickly and bowels became normal in less than a month. Weakness of legs and pains in knees, legs, and feet still persisted, however, for over three months. He received for varying intervals Fowler's solution, tincture of nux vomica, potassium iodide, and sodium salicylate. He was discharged September 9, 1914, having gained 7½ pounds and with only an occasional slight pain in the feet.

Patient No. 182, white male, age 67. Had slight attack of pellagra in spring of 1908 and has had an increase of symptoms every spring and summer since then. Admitted July 26, 1914, with slight scaling of hands, forearms, and face, and practically no gastrointestinal symptoms. Nervous symptoms were most pronounced, consisting of dizziness, slight mental confusion, and a spastic paraplegic gait. He also had dimness of vision and insomnia. He was weak and walked with the aid of a cane. He received Fowler's solution and laxatives. He improved under treatment, gaining 7 pounds in weight and gaining in strength. At the time of his discharge, on September 20, 1914, he still suffered with occasional dizziness and burning of the feet and the spastic paraplegic gait still remained.

Patient No. 183, white male, age 65, admitted July 27, 1914, about two weeks after the first symptoms of pellagra. Had dermatitis of hands, forearms, and elbows, reddened tongue, sore mouth, burning in stomach, and diarrhea. Also suffered with headaches, dizziness, pains in the legs, and burning of the feet. He received Fowler's solution and elixir of iron, quinine, and strychnine. He made a steady improvement and was discharged September 30, 1914, with no symptoms except an occasional dizziness.

Patient No. 188, white male, age 40. Had first attack of pellagra in spring of 1913 and second in May, 1914. Admitted September 27, 1914, with very slight scaling dermatitis of hands. He had a red and fissured tongue, pain in the epigastrium, flatulency, and diarrhea. Nervous symptoms were most pronounced, consisting of dizziness, pains in the head and neck, pains in the legs, and burning of the feet. He was weak and mentally depressed. He received Fowler's solution, potassium iodide, and essence of pepsin. At the time of his discharge, on October 23, 1914, he had gained 5 pounds, dermatitis had disappeared, and he showed a good improvement in his gastrointestinal symptoms. Nervous symptoms, as occasional dizziness, headaches, pains in the legs, and burning of the feet, still remained.

Patient No. 191, white male, age 48. During December, 1913, suffered from general weakness, dizziness, and dimness of vision. In February, 1914, dermatitis of hands appeared, with burning of the stomach and feet. Admitted October 1, 1914, at which time dermatitis had disappeared. He had a slightly reddened tongue and complained of burning in the stomach, with constipation. He was confined to bed on account of weakness, dizziness, and a spastic paraplegia of the lower extremities. He was mentally depressed and confused and complained of dimness of vision, muscular cramps, and burning of the feet and about the anus. He received Fowler's solution for three weeks and the placebo during the remainder of his stay in the hospital. At the end of three weeks he was able to walk about the ward with the aid of a cane. He still had weakness of the leg muscles, dizziness, and burning of the feet. These conditions gradually cleared up, and he was discharged December 15, 1914, after gaining 17 pounds. He had no gastrointestinal symptoms and could walk about with a cane. He had no dizziness, but there still remained a stiffness of the lower limbs and occasional burning of the feet.

Patient No. 194, white male, age 14. In May, 1913, had general weakness and dimness of vision. Mouth became sore in September, 1913. In December, 1913, dermatitis appeared on hands, forearms, shoulders, abdomen, and inner surfaces of the

thighs, with dizziness and diarrhea. He became confined to bed in January, 1914, on account of weakness and paralysis. He remained bedridden until admitted, on June 19, 1914. At that time he had a brown, scaling dermatitis of hands, forearms, abdomen, and inner surfaces of thighs, and his prepuce was excoriated. His tongue was red and fissured and he had small ulcerations at the edges and salivation. He complained of pain in the epigastrium and bowels were constipated. He was emaciated and confined to bed with practically no use of his lower limbs. There were contractures of the fingers and knees, with double wrist drop and ankle drop.

There was atrophy of the abductor muscles of the arms, of the extensor muscles of the forearms, and of the flexor muscles of the legs. Knee jerks were absent. There was very slight impairment of the mental faculties. He suffered from dizziness and dimness of vision. Appetite was good. He received for varying intervals Fowler's solution, elixir of iron, quinine, and strychnine, with a thymol treatment for hookworm, and laxatives.

Improvement was apparent at the end of two weeks and continued steadily. On September 1 he was able to stand alone, and on September 20 could walk with crutches. On October 20 he could walk short distances without crutches. He was discharged December 20, having gained 28½ pounds and being able to walk about the streets without crutches. There still remained some contracture of the fingers, with wrist drop and ankle drop when the muscles were relaxed.

Patient No. 197, white male, age 41. During January, 1914, suffered with indigestion, soreness across abdomen, and dizziness. In the same month his appendix was removed and his right kidney anchored. During March, 1914, dermatitis appeared, and he had a sore mouth, with burning in the stomach and diarrhea, and pellagra was diagnosed. Admitted August 29, 1914, with scaling dermatitis of hands, red and fissured tongue, sore mouth, burning in the stomach, and diarrhea. He was mentally depressed and confused and suffered from weakness, dizziness, dimness of vision, pains in the knees, and prickling sensations. He also had pains in the head and back of the neck. Appetite remained good. He received Fowler's solution and sirup of hypophosphites. His skin and gastrointestinal symptoms cleared up early, but he continued to complain of dizziness, pains in the head and knees, and burning of the feet. These symptoms disappeared gradually, and he was discharged February 1, 1915, with no evidence of pellagra, and having gained 13½ pounds.

Patient No. 225, white male, age 44. Had had four attacks of pellagra, the fourth appearing in March, 1915. Admitted June 6, 1915, with scaling dermatitis of hands and seborrhœic condition on forehead and nose. He had a red and fissured tongue, burning in the mouth and stomach, with 12-16 bowel movements a day and burning about the anus. He was weak and emaciated and suffered with dizziness, insomnia, dimness of vision, pains in the head, and severe pains in the knees and legs. He was mentally depressed and confused. Could walk but a few steps on account of weakness and staggering. Appetite remained good. Dermatitis cleared up readily, but weakness, dizziness, pains in the legs, and diarrhea persisted for about five weeks.

He received bismuth subnitrate, lead and opium pills, and dilute hydrochloric acid with meals.

At the end of 82 days he was able to walk outdoors, and had gained 5 pounds. Gastrointestinal symptoms had disappeared, but he was still weak, and had occasional spells of dizziness and pain in the legs.

#### Synopsis of Patients Receiving Placebo or no Medication.

A brief synopsis of the nine cases receiving only the placebo and the four cases receiving no medication follows.

In these cases improvement can be attributed only to dietetic treatment and rest.

Patient No. 196, white male, age 63 years. First attack of pellagra occurred during April, 1914, at which time he complained of weakness in his legs, dermatitis of hands, forearms, legs, and face, diarrhea, sore mouth, attacks of dizziness, and double vision.

His condition became worse during the summer and he was confined to bed for short intervals. Admitted to hospital on October 27, 1914, at which time he presented scaling dermatitis on hands, forearms, and legs. A seborrhœic condition with roughening was present on the forehead and nose. Tongue was red and fissured and he had diarrhea. Was extremely weak and practically confined to bed for about a week. Dizziness and staggering were marked, and he was unable to walk without support.

He complained of dim vision with occasional diplopia, burning of hands and feet and about anus.

He was mentally depressed and suffered with insomnia for the first few nights. No mental confusion was noted.

He remained under treatment 79 days, during which time he received the placebo and dietetic treatment. He showed a steady and marked improvement and gained 14 pounds. Upon discharge his only complaint was of weakness in the legs, and his hands after peeling off showed a slight glazed appearance.

Patient No. 201, white male, 56 years. First attack of pellagra appeared during May, 1914, with the following symptoms: Dermatitis of hands, weakness, sore mouth, diarrhea, burning in stomach, and marked mental confusion. He remained ill and unable to work from June, 1914, to January 10, 1915, when he was admitted to hospital.

Upon admission he showed no skin lesions, but marked nervous symptoms, as mental confusion and depression, dizziness, pains in the legs, and burning feet. Upon occasions he did not realize where he was or what was going on about him. He was quite weak and spent much of his time lying down.

He had slight diarrhea, and complained of burning in the stomach. While in the hospital he developed a slight enlargement of the thyroid, with protuberant eyeballs and tachycardia.

He remained under treatment 100 days, and showed a good improvement, with a gain of 8½ pounds in weight. Received only the placebo and dietetic treatment.

Upon discharge he complained of weakness of leg muscles and showed some sluggishness of the mental faculties. The thyroid remained enlarged.

Patient No. 202. White male. Age 54. First attack of pellagra appeared in April, 1909, and had recurred every spring since. In April, 1914, dermatitis appeared on hands, feet, and ankles. This was followed by extreme weakness; he had done no work since, and had been confined to bed for short intervals during the summer. In addition he suffered with headaches, diarrhea, burning in stomach, dizziness, pains in the legs, and burning feet.

Admitted December 12, 1914, with scaling dermatitis of hands, feet, and ankles, and roughened skin over forehead. He had a sore mouth with red and fissured tongue, burning in the stomach, pain in the epigastrium, and diarrhea. Was confined to bed for several days on account of weakness and dizziness. He was mentally confused and depressed and complained of dimness of vision, headaches, pains in the legs, and burning of the feet and about the anus. Depression of ribs near the lower end of the sternum was noted.

At the end of three weeks the skin and gastrointestinal symptoms had practically disappeared and he showed marked improvement in his mental condition.

He remained under treatment 90 days, receiving only the placebo and dietetic treatment, and gained 34 pounds in weight. Upon discharge he complained only of occasional burning in the feet and weakness in the knees, but felt able to do a good day's work.

Patient No. 204. White male. Age 22. First attack appeared in spring of 1910, and had been repeated yearly since. In April, 1914, had slight dermatitis of hands, followed by weakness, attacks of diarrhea, and confusion.



Admitted on December 17, 1914, showing no dermatitis and little gastrointestinal disturbances beyond burning in the stomach, flatulency, and loss of appetite. His symptoms were chiefly nervous. He suffered from a mild dementia, with hallucinations and extreme mental depression and apathy. He lived within himself and said that things going on about him lacked reality. He suffered from dizziness and weakness and appeared markedly emaciated. He also had a hookworm infection.

He remained under treatment 119 days, receiving only the placebo in addition to thymol for a hookworm infection. He gained  $7\frac{1}{2}$  pounds in weight, gained in strength, and showed slight improvement in his mental condition.

Upon discharge he still complained of dizziness, and mental confusion still existed.

Patient No. 205. White male. Age 37. First attack of pellagra appeared in July, 1914. He then suffered from dermatitis of hands and face, sore mouth, burning in stomach, and diarrhea.

Admitted on January 13, 1915, with dermatitis of both hands, sore mouth, redness of tongue, and six to eight bowel movements a day. He was weak and emaciated, but had a good appetite. Nervous symptoms consisted of burning of the feet, dizziness, and pains in the legs. Classed as a typical severe case of pellagra with predominating symptoms of the gastrointestinal tract.

He made a rapid and marked improvement, receiving only the placebo and dietetic treatment. He was under treatment 98 days, during which time he gained 31 pounds and was discharged with only an occasional burning of the feet.

Patient No. 208. White male. Age 52. Pellagra first appeared in the spring of 1914, at which time he complained of indigestion, weakness, dizziness, and pains in the legs. Dermatitis of the hands appeared in September, 1914. Admitted to the hospital October 21, 1914, at which time he had a slight scaling dermatitis of the hands, red and fissured tongue, and flatulency. He was confined to bed on account of weakness and was emaciated. Nervous symptoms were predominant. He had a mild delirium at times, with hallucinations, mental confusion, and extreme depression. He suffered with pains in the legs and burning feet. He received the placebo and dietetic treatment and made a rapid improvement. At the end of a month he was taking short walks outdoors. Upon January 31, 1915, he developed a semiprolapse of the rectum, with large and distended purple hemorrhoids which were irreducible and required immediate operation. Following the operation his tongue, which had previously nearly returned to normal, became reddened again for a few days. Aside from this he made an uneventful recovery. He was discharged on April 30, after 191 days' treatment, with only a slight occasional dizziness and stiffness of the knees. He gained in weight  $32\frac{1}{2}$  pounds.

Patient No. 211. White male. Age 30. His first attack appeared in March, 1913, and recurred in the same month during 1914.

Upon admission April 30, 1915, he had dermatitis of the hands and face, stomatitis, with a red tongue and sore lips, burning in the stomach, and six to eight bowel movements a day. He had attacks of dizziness and staggering, burning in the feet and hands, and was mentally depressed. Classed as a severe typical attack of pellagra, with predominating skin and gastrointestinal symptoms. He received the placebo and thymol treatment for a hookworm infection. He remained in the hospital 29 days and gained  $10\frac{1}{2}$  pounds, and was discharged with only a slight roughening on the backs of his hands.

Patient No. 213. White male. Age 60. First attack of pellagra occurred in June, 1914, and second in March, 1915. Admitted to hospital on May 3, 1915, with scaling dermatitis of the hands, red tongue, burning in the stomach, flatulency, and six to seven bowel movements daily. Extremely weak and emaciated. Nervous symptoms were predominant; insomnia, mental depression, and dizziness were marked.

He remained under treatment 38 days, receiving the placebo. He went home on account of illness in the family after making a good improvement. He gained  $17\frac{1}{2}$



pounds and his gastrointestinal and skin symptoms had disappeared. He still, however, complained of dizziness and weakness in the legs and was depressed mentally.

Patient No. 214, white male, age 40. This patient had a slight attack of pellagra in April, 1914, and a severe attack in February, 1915.

Upon admission, April 19, 1915, he presented a scaling dermatitis of the hands and face, redness of the tongue, burning in the stomach and pain in the epigastrium, with flatulency and slight diarrhea. Nervous symptoms were predominant and consisted of dimness of vision, mental confusion with partial loss of memory, dizziness and staggering, tachycardia, pains in the legs, and burning feet. He could walk only a short distance and his gait was of a spastic paralytic type. Upon the fourth day after admission he passed into a comatose condition and could not be aroused for about six hours. On the next day he had no recollection of this occurrence. Mental confusion had disappeared 10 days after admission and he was able to take short walks. He made a rapid improvement, receiving no medication except the placebo. He was under treatment 66 days, during which time he gained 15 pounds. Upon discharge he had some stiffness of the legs and suffered with occasional burning of the feet.

Patient No. 215, white male, age 30. Pellagra first appeared in May, 1913. Second attack appeared in May, 1914, and third in March, 1915.

Upon admission, May 13, 1915, patient presented scaling dermatitis of both hands, redness and fissuring of the tongue, pain in the epigastrium, flatulency and burning in the stomach, and constipation.

His vision was dim and he complained of fullness in the head with attacks of dizziness and staggering. He also had pains in the legs and burning of the feet, and was mentally depressed. Weakness of the legs was present.

He was under treatment for 44 days, receiving only thymol for a hookworm infection.

He showed a marked improvement and on his discharge complained only of a feeling of fullness in his head. He gained 15 pounds.

Patient No. 222, colored male, age 26. First symptoms of pellagra appeared about May 1, 1915. He had a severe diarrhea, stomatitis with loosening of the teeth, pain in the epigastrium, and extensive moist dermatitis.

Upon admission, June 15, 1915, the patient presented a moist dermatitis with bullæ on the hands, feet, chest, and neck, and a dry scaling on the forehead and beneath the eyes. He had a severe stomatitis, salivation, burning through the gastrointestinal tract, and pains in the epigastrium, and bowels were moving 6 to 10 times a day. He was weak and emaciated. He suffered with severe pains in the feet and had dizziness and dimness of vision. Mental condition appeared normal. Appetite remained very good. A secondary infection of the skin of the hands and neck occurred, which was treated with a 1-5,000 bichloride dressing and *Staphylococcus aureus* vaccine. A rise in temperature, going at its highest point to 39.6° C., was noted for five days. After this his condition rapidly improved and at the end of 20 days his skin lesions and gastrointestinal symptoms had practically disappeared. After being under treatment 65 days he presented no evidence of pellagra, had gained 18 pounds, and was able to go to work.

Patient No. 223, white male, age 31. First attack of pellagra occurred in May, 1914, second in October, 1914, and third in March, 1915.

Admitted to hospital June 16, 1915, with scaling dermatitis of hands, forearms, forehead, and cheeks. He was unable to walk without support and extremely emaciated. He had a severe stomatitis with a red and fissured tongue and salivation. Pains in the epigastrium, burning in the stomach, flatulency, burning in the rectum, and diarrhea were present.

He complained of dimness of vision, dizziness, and burning in the feet. Mental condition about normal, except for slight depression.

Treatment was wholly dietetic and at the end of three weeks he was able to be up and about.

At the end of 69 days he had gained 24 pounds in weight and presented no evidence of pellagra. He complained of no symptoms and was able to go to work.

Patient No. 224, white male, age 40. First attack of pellagra occurred in September, 1914, and second in May, 1915. Admitted to hospital June 28, 1915, with moist dermatitis involving the hands and back of neck and scaling dermatitis of the elbows, scrotum, forehead, and nose.

He had a severe stomatitis with red and fissured tongue and salivation. Gastro-intestinal symptoms consisted of burning in the stomach and rectum. Nervous symptoms consisted of pains in the legs and burning of the feet, insomnia, and extreme mental depression. Secondary infection of the skin of the hands occurred, and this was treated with 1-5,000 bichloride dressings.

At the end of three weeks the skin had peeled off from his hands, leaving a red glazed surface. He still complained of severe burning in the hands and feet and was mentally depressed, but able to walk out each day. He received only dietetic treatment and at the end of 58 days was discharged with only an occasional complaint of burning in the hands. He had gained 10 pounds. His hands still had a slightly reddened appearance when hanging down, but otherwise there was no evidence of pellagra.

These 13 cases must be considered as typical severe cases of pellagra, and their improvement must be attributed to dietetic treatment in connection with rest, regulated exercise, and so far as possible a freedom from worry. Their histories are given somewhat fully to demonstrate the results which may be obtained by this manner of treatment.

#### Summary.

The average duration of stay under treatment of the 15 patients receiving medication who improved was 85.8 days, and the average gain in weight 11.7 pounds. The shortest period under treatment was 26 days, and the longest 189 days.

The average duration of stay under treatment in the 13 patients receiving only dietetic treatment was 83.5 days, and the average gain in weight was 18.3 pounds. The shortest period under treatment was 29 days, and the longest 191 days.

The 13 patients receiving no medication were comparable as to severity and in all other respects to the 18 patients who received various drugs in addition to the dietetic treatment.

It can be said with certainty that the latter group made in no respect an improvement more rapid or marked.

As to the type of cases most benefited by dietetic treatment, it can be said that those showing the least nervous symptoms show most ready and marked response to treatment.

Patients showing predominating symptoms of the skin and alimentary tract as a rule show a ready response to treatment, and improvement is noted within a week to 10 days.

On the other hand, those who have suffered from repeated attacks and have sustained a serious damage to the nervous system require a longer period for the repair of this damage.

#### Conclusion.

A study of these cases allows us to conclude that in pellagra the dietetic treatment is of paramount importance, and that in this series success has followed the use of a diet in which the animal and leguminous protein component has been relatively increased and the non-leguminous vegetable component relatively decreased.

#### DIET CONSUMED PREVIOUS TO AN ATTACK OF PELLAGRA.

In taking the histories of pellagra patients an attempt has been made to ascertain from the patients as accurately as possible the customary diet consumed during the three months previous to the appearance of the disease.

It is plainly impossible to get an absolutely correct statement from a patient concerning the food consumed during a period perhaps several months previous.

It is considered possible, however, to get sufficiently accurate data to allow of some deductions of value.

The data collected from 35 patients are considered sufficiently accurate for this purpose.

The following table gives a summary of the food said to have been consumed by 35 patients during the three months previous to an attack of pellagra. These tables are compiled from statements by the patients, elicited by careful questioning.

#### BREAKFAST.

Food consumed.	Number patients consuming—						
	Once a week.	Twice a week.	Three times a week.	Four times a week.	Five times a week.	Six times a week.	Seven times a week.
Biscuit.....	0	2	2	1	1	1	24
Light bread.....	0	2	4	0	0	0	1
Hoccakes.....	0	0	0	0	1	1	0
Batter cakes.....	0	0	2	0	0	0	1
Corn bread.....	2	1	0	0	0	0	1
Sirup.....	1	1	4	2	1	1	16
Hominy.....	3	1	2	1	2	2	6
Oatmeal.....	0	2	0	0	0	0	2
Rice.....	2	1	3	0	0	0	0
Corn flakes.....	0	0	1	0	0	0	0
Eggs, 1 or 2.....	1	6	2	0	1	1	2
White meat.....	1	4	3	1	2	3	12
Pork chops.....	3	4	0	0	0	0	0
Beef.....	2	0	0	0	0	0	0
Ham.....	0	4	1	0	0	0	0
Sausage.....	2	1	0	0	0	0	0
Fresh fish.....	1	0	0	0	0	0	0
Canned salmon.....	0	3	0	0	0	0	0
Irish potatoes.....	0	1	0	0	0	0	0
Sweet potatoes.....	0	1	0	0	0	0	0
Butter.....	1	1	0	1	2	2	5
Milk.....	0	1	0	1	0	1	1
Coffee (milk).....	0	0	1	0	0	0	3
Coffee (no milk).....	1	0	0	1	0	0	19
Tea (no milk).....	0	0	0	0	0	0	1

## DINNER.

Food consumed.	Number patients consuming—						
	Once a week.	Twice a week.	Three times a week.	Four times a week.	Five times a week.	Six times a week.	Seven times a week.
Biscuit.....	0	1	2	3	1	4	7
Light bread.....	0	0	2	0	0	0	1
Hocakes.....	0	0	0	1	0	0	1
Corn bread.....	0	1	3	5	1	2	6
Greens.....	2	1	6	5	4	5	6
Peas or beans.....	5	6	4	1	0	1	0
Irish potatoes.....	1	4	7	3	3	0	0
Sweet potatoes.....	3	4	2	3	1	0	0
Onions.....	1	0	0	0	0	0	0
Rice.....	2	5	2	0	0	2	2
Hominy.....	0	2	1	1	0	0	1
Tomatoes, canned.....	2	0	4	0	0	0	0
White meat.....	0	1	3	4	1	5	10
Chicken.....	3	0	0	0	0	0	0
Canned salmon.....	1	0	0	0	0	0	0
Beef.....	5	2	0	0	0	0	0
Fresh pork.....	2	0	0	0	0	0	0
Ham.....	0	2	1	0	0	0	0
Fresh fish.....	0	1	0	0	0	0	0
Butter.....	0	0	0	1	1	0	3
Milk.....	0	2	0	1	1	1	0
Coffee (no milk).....	0	0	0	0	0	0	4
Tea.....	0	0	0	0	0	0	2
Sirup.....	1	0	1	4	2	3	6
Preserves and jam.....	7	1	0	0	0	0	0
Pastry.....	6	1	0	0	0	0	0

## SUPPER.

Biscuit.....	0	0	1	3	3	4	13
Corn bread.....	0	2	2	2	0	2	8
Light bread.....	0	0	0	1	0	0	1
Hocakes.....	0	0	0	0	0	1	0
Batter cakes.....	0	2	0	0	0	0	0
Greens.....	2	5	5	3	5	3	4
Peas or beans.....	1	3	0	1	0	0	0
White potatoes.....	1	3	2	2	0	1	0
Sweet potatoes.....	1	2	2	1	0	0	0
Canned tomatoes.....	0	0	0	1	0	0	0
Rice.....	1	1	2	0	0	0	0
Hominy.....	0	0	3	0	1	1	0
Oatmeal.....	0	1	0	0	0	0	0
Meat hash.....	0	1	0	0	0	0	0
White meat.....	0	4	1	2	2	3	6
Pork chops.....	1	0	1	0	0	0	0
Ham.....	1	0	1	0	0	0	0
Canned salmon.....	0	2	1	0	0	0	0
Butter.....	0	0	0	1	1	0	3
Eggs, 1 or 2.....	0	1	0	1	0	1	0
Sirup.....	0	4	0	1	3	3	11
Preserves or jam.....	2	1	0	0	0	0	0
Pastry.....	0	1	0	0	0	0	0
Milk.....	0	0	0	0	0	2	0
Tea (no milk).....	0	0	0	0	0	0	2
Coffee (no milk).....	0	0	1	1	0	0	0

## Summary of Table.

The various articles of diet are classed below into carbohydrates, fats, and proteins, and the relative frequency of their consumption is indicated.

## CARBOHYDRATES.

Wheat: White flour was used in biscuits, light bread, and batter cakes.

Biscuits were made from either self-rising or not self-rising flour and consumed in varying quantities from 1-6 at a meal, according

to the individual taste. They were the staple breadstuff in a large majority of cases for breakfast, and to a less extent for supper. Twenty-four patients used biscuits for every breakfast, thirteen for every supper, and seven used them every day three times a day.

Light bread and batter cakes found a very limited use.

Corn: Corn meal was used in corn bread and occasionally in hoe-cakes. Corn bread was used every day for breakfast by one patient, every day for dinner by six, and every day for supper by eight.

Hominy or "grits" was used by nearly one-third of the patients four or more times a week for breakfast. It was not used extensively at any other meal. As a rule it was eaten with gravy or grease from fried white meat.

Corn flakes were used by only one patient.

Rice: This was used to a slight extent in all three meals.

Rolled oats: This article found a very limited use.

Irish potatoes were used to a considerable extent for dinner and supper.

Sweet potatoes were used less than white potatoes.

*Onions.*—Used by only one patient.

*Canned tomatoes.*—Found a very limited use.

*Greens.*—Under greens are included turnips and turnip tops, collards, mustard, and cabbage. These formed a most important part of dinner and supper. Twenty patients stated that they ate them four or more times a week for dinner, and 15 that they ate them four or more times a week for both dinner and supper. The customary manner of cooking was by boiling with white meat and using one-half to 1 pound of the meat.

*Sirup.*—Cane sirup found a most important place in the dietary, being used in quantities varying from 2 tablespoonfuls to one-half pint to a meal. Of the 35 patients, 16 stated that they used it at every breakfast, 6 at every dinner, 11 at every supper, and 6 at every meal.

*Preserves, jams, and pastries.*—These were used only occasionally by a few patients.

*Sugar.*—Of the 26 patients using tea or coffee, 21 used sugar in their beverage.

#### FATS.

White meat, also called side meat or "sowbelly," was found to be the staple meat for all three meals. It is a fat pork with very little lean, preferably cured with dry salt, and manifestly deficient as a substitute for fresh lean meat. Twelve patients stated that they ate it fried every morning, and 6 others ate it four to six times a week. Ten ate white meat every day at dinner, and 10 others from four to six times a week. Six ate it every day for supper, and 7 others from



four to six times a week. Eight used it every day for three meals. Fourteen patients used no meat except white meat.

For six patients white meat furnished the only source of animal protein.

Lard: The majority of patients used a compound lard for bread making.

Butter: This was used by about one-third of the patients.

#### PROTEINS.

*Animal proteins.*—Lean meats: This includes beef, ham, pork, chicken, and sausage.

Only 9 patients stated that they used beef, and none to exceed one meal twice a week.

Fresh pork was used by 11 patients not to exceed one meal three times a week.

Ham was also used by 10 patients not to exceed one meal three times a week.

Chicken was used by 3 patients not to exceed one meal once a week.

Sausage was used by 3 patients not to exceed one meal twice a week.

No person consumed any of the above lean meats in any combination to exceed seven meals in a week, and only 2 patients stated that they used lean meats that often.

Eggs: The use of eggs was limited to 16 patients. Many stated that their eggs were sold rather than used on the home table.

Milk: Either fresh or as buttermilk was used by only 10 patients.

Fish: Fresh fish was eaten by only 2 patients not to exceed twice a week.

Canned salmon: This was eaten by 4 patients not to exceed one meal twice a week.

*Vegetable proteins.*—Legumes: Seventeen patients stated that they ate peas and beans, the majority doing so only once a day two or three times a week.

From a total of 35 histories of the diet consumed by patients during the three months previous to an attack of pellagra we find that there was a—

Total absence of beef in 26 instances.

Total absence of eggs in 19 instances.

Total absence of milk as a beverage in 25 instances.

Total absence of beef, eggs, and milk in 9 instances.

#### Conclusion.

A study of these diet histories shows that the vegetable and fat components were notably conspicuous and that the animal protein foods were relatively inconspicuous.

## PLAGUE-PREVENTION WORK.

## CALIFORNIA.

The following report of plague-prevention work in California for the week ended July 1, 1916, was received from Senior Surg. Pierce, of the United States Public Health Service, in charge of the work:

## SAN FRANCISCO, CAL.

## RAT PROOFING.

New buildings:	
Inspections of work under construction.	145
Basements concreted (78,885 square feet).	64
Floors concreted (33,550 square feet)....	30
Class A, B, and C (fireproof) buildings:	
Inspections made.....	107
Roof and basement ventilators, etc., screened.....	445
Wire screening used (square feet).....	2,430
Openings around pipes, etc., closed with cement.....	1,010
Sidewalk lens lights replaced.....	800
Old buildings:	
Inspections made.....	312
Wooden floors removed.....	30
Yards and passageways, plank removed.....	10
New foundation walls installed (cubic feet).....	2,545
Concrete floors installed (2,894 square feet).....	8
Basements concreted (22,365 square feet).	21
Yards and passageways, etc., concreted (10,012 square feet).....	42
Total area concrete laid (square feet)....	35,271
Floors rat proofed with wire cloth (2,500 square feet).....	2
Buildings razed.....	17
New garbage cans stamped approved.....	150
Nuisances abated.....	241

## OPERATIONS ON THE WATER FRONT.

Vessels inspected for rat guards.....	12
Reinspections made on vessels.....	16
New rat guards procured.....	9
Defective rat guards repaired.....	8
Rats trapped on wharves and water front..	13
Rats trapped on vessels.....	51
Traps set on wharves and water front.....	134
Traps set on vessels.....	235
Poisons placed within Panama-Pacific International Exposition grounds (pieces).....	35,000
Bait used on water front and vessels, bacon (pounds).....	4

## RATS COLLECTED AND EXAMINED FOR PLAGUE.

City.	Col- lected.	Exam- ined.	Infected.
San Francisco.....	115	114	None.
Oakland.....	25	25	None.
Total.....	140	140	None.

## RATS IDENTIFIED.

Mus norvegicus.....	21
Mus rattus.....	31
Mus alexandrinus.....	33
Mus musculus.....	14

## SQUIRRELS COLLECTED AND EXAMINED.

County.	Col- lected.	Exam- ined.	Infected.
Alameda.....	641	641	None.
San Benito.....	818	750	1
Contra Costa.....	556	556	3
Merced.....	232	232	None.
San Joaquin.....	234	234	None.
Stanislaus.....	301	301	None.
San Luis Obispo.....	366	366	None.
Santa Cruz.....	148	148	None.
Santa Clara.....	221	221	1
San Mateo.....	185	185	None.
Lassen.....	11	11	None.
Mendocino.....	59	59	None.
Total.....	3,772	3,704	5

## RANCHES INSPECTED AND HUNTED OVER.

Alameda County.....	55
Contra Costa County.....	28
San Benito County.....	32
San Joaquin County.....	28
Stanislaus County.....	17
Santa Clara County.....	23
San Luis Obispo County.....	9
San Mateo County.....	9
Santa Cruz County.....	21
Merced County.....	25
Lassen County.....	11
Mendocino County.....	7
Total.....	265

## PLAGUE-INFECTED SQUIRRELS.

Contra Costa County:	
Shot June 16, 1916. Peoples Water Co., Sather, lessee, 8 miles southeast of San Pablo (Sobrante Grant).....	1
Shot June 17, 1916. Crocker & Dillon property, sec. 9, T. 1 N., R. 1 E., 7½ miles southwest of Antioch.....	1
Shot June 20, 1916. Peoples Water Co., Lynch, lessee, 3 miles southeast of San Pablo (Sobrante Grant).....	1
San Benito County:	
Shot June 15, 1916. D. D. Sindell ranch, 4 miles east of Paicines, sec. 16, T. 14 S., R. 7 E.....	1
Santa Clara County:	
Shot June 21, 1916. John Bodeau ranch, 9 miles northeast of Los Gatos, Santa Teresa Rancho.....	1

## RECORD OF PLAGUE INFECTION.

Places in California.	Date of last case of human plague.	Date of last case of rat plague.	Date of last case of squirrel plague.	Total number rodents found infected since May, 1907.
<b>Cities:</b>				
San Francisco.....	Jan. 30, 1908	Oct. 23, 1908	(1)	398 rats.
Oakland.....	Aug. 9, 1911	Dec. 1, 1908	(1)	126 rats.
Berkeley.....	Aug. 28, 1907	(1)	(1)	None.
Los Angeles.....	Aug. 11, 1908	(1)	Aug. 21, 1908	1 squirrel.
<b>Counties:</b>				
Alameda (exclusive of Oakland and Berkeley).....	Sept. 24, 1909	Oct. 17, 1909, <sup>1</sup>	June 7, 1916	291 squirrels; 1 wood rat.
Contra Costa.....	July 13, 1915	(1)	June 20, 1916	1,624 squirrels.
Fresno.....	(1)	(1)	Oct. 27, 1911	1 squirrel.
Merced.....	(1)	(1)	May 12, 1916	7 squirrels.
Monterey.....	(1)	(1)	May 27, 1916	38 squirrels.
San Benito.....	June 4, 1913	(1)	June 15, 1916	66 squirrels.
San Joaquin.....	Sept. 18, 1911	(1)	Aug. 26, 1911	18 squirrels.
Santa Clara.....	Aug. 31, 1910	(1)	June 21, 1916	32 squirrels.
San Luis Obispo.....	(1)	(1)	Jan. 29, 1910	1 squirrel.
Santa Cruz.....	(1)	(1)	May 30, 1916	5 squirrels.
Stanislaus.....	(1)	(1)	June 2, 1911	18 squirrels.

<sup>1</sup> None.<sup>2</sup> Wood rat.

The work is being carried on in the following-named counties: Alameda, Contra Costa, San Francisco, Stanislaus, San Benito, Monterey, Merced, Santa Clara, San Mateo, Santa Cruz, San Luis Obispo, San Joaquin, Mendocino, Lassen, and Modoc.

## LOUISIANA—NEW ORLEANS—PLAGUE ERADICATION.

The following report of plague-eradication work at New Orleans for the week ended July 8, 1916, was received from Passed Asst. Surg. Simpson, of the United States Public Health Service, in charge of the work:

## OUTGOING QUARANTINE.

Vessels fumigated with cyanide gas.....	15
Pounds of cyanide used in cyanide-gas fumigation.....	610
Pints of sulphuric acid used in cyanide-gas fumigation.....	916
Clean bills of health issued.....	38
Foul bills of health issued.....	3

## FIELD OPERATIONS.

Rodents trapped.....	6,082
Premises inspected.....	5,018
Notices served.....	306
Garbage cans installed.....	8

## BUILDINGS RAT PROOFED.

By elevation.....	78
By marginal concrete wall.....	101
By concrete floor and wall.....	110
By minor repairs.....	196
Total buildings rat proofed.....	485
Concrete laid (square yards).....	4,145
Premises, planking and shed flooring removed.....	60
Buildings demolished.....	78
Total buildings rat proofed to date (abated).....	119,761

## LABORATORY OPERATIONS.

Rodents received by species:	
Mus rattus.....	95
Mus norvegicus.....	980
Mus alexandrinus.....	162
Mus musculus.....	4,788

## LABORATORY OPERATIONS—continued.

Rodents received by species—Continued.	
Wood rats.....	76
Musk rats.....	12
Putrid (included in enumeration of species).....	105
Total rodents received at laboratory.....	6,113
Rodents examined.....	1,373
Rats suspected of plague.....	123
Plague rats confirmed.....	1

## PLAGUE STATUS TO JULY 8, 1916.

Last case of human plague, Sept. 8, 1915.	
Last case of rodent plague, June 29, 1916.	
Total number of rodents captured to July 8.	767,138
Total number of rodents examined to July 8.	367,766

## Total cases of rodent plague to July 8, by

species:	
Mus musculus.....	6
Mus rattus.....	19
Mus alexandrinus.....	16
Mus norvegicus.....	271
Total rodent cases to July 8, 1916.....	312

## PLAGUE RAT.

Case No. 312:	
Address, 2831 Dumaine Street.	
Captured, June 29, 1916.	
Diagnosis confirmed, July 8, 1916.	
Treatment of premises: Intensive trapping.	
Removal of planking in yard, rubbish and debris. Rat proofing dwelling.	

<sup>1</sup> Indicates the number of rodents the tissues of which were inoculated into guinea pigs. Most of them showed on necropsy only evidence of recent inflammatory process; practically none presented gross lesions characteristic of plague infection.

## WASHINGTON—SEATTLE—PLAGUE ERADICATION.

The following reports of plague-eradication work at Seattle were received from Surg. Boggess, of the United States Public Health Service, in charge of the work.

## WEEK ENDED JULY 1, 1916.

RAT PROOFING.		WATER FRONT.	
New buildings inspected.....	17	Vessels inspected and histories recorded.....	16
New buildings reinspected.....	27	Vessels fumigated.....	2
Basements concreted, new buildings (square feet, 16,250).....	14	Sulphur used, pounds.....	2,500
Floors concreted, new buildings (square feet, 14,180).....	8	New rat guards installed.....	10
Yards, etc., concreted, new buildings (square feet, 1,250).....	2	Defective rat guards repaired.....	23
Sidewalks concreted (square feet).....	9,750	Fumigation certificates issued.....	2
Total concrete laid, new structures (square feet).....	41,430	Port sanitary statements issued.....	39
New buildings elevated.....	3	The usual day and night patrol was maintained to enforce rat guarding and fending.	
New premises rat proofed, concrete.....	22	MISCELLANEOUS WORK.	
Old buildings inspected.....	3	Rat-proofing notices sent to contractors, new buildings.....	11
Premises rat proofed, concrete, old buildings.....	2	Letters sent in re rat complaints.....	5
Floors concreted, old buildings (square feet, 2,275).....	2	Fishing vessels inspected—medicine chests.....	4
Wooden floors removed, old buildings.....	2	RODENTS EXAMINED IN EVERETT.	
Buildings razed.....	2	Mus norvegicus trapped.....	53
LABORATORY AND RODENT OPERATIONS.		Mus norvegicus found dead.....	1
Dead rodents received.....	17	Total.....	54
Rodents trapped and killed.....	346	Rodents examined for plague infection.....	50
Rodents recovered after fumigation.....	12	Rodents proven plague infected.....	None.
Total.....	375	RAT-PROOFING OPERATIONS IN EVERETT.	
Rodents examined for plague infection.....	273	New buildings inspected.....	3
Rodents proven plague infected.....	None.	New buildings reinspected.....	12
Bodies examined for plague infection.....	8	New buildings elevated.....	3
Bodies found plague infected.....	None.	New buildings, basement concreted (square feet, 1,440).....	1
CLASSIFICATION OF RODENTS.		Total concrete laid, new buildings (square feet).....	1,440
Mus rattus.....	20	RODENTS EXAMINED IN TACOMA.	
Mus alexandrinus.....	90	Mus norvegicus trapped.....	75
Mus norvegicus.....	196	Mus alexandrinus trapped.....	4
Mus musculus.....	67	Total.....	79
Mountain beaver.....	1	Rodents examined for plague infection.....	79
Squirrel.....	1	Rodents proven plague infected.....	None.

## WEEK ENDED JULY 8, 1916.

RAT PROOFING.		RAT PROOFING—continued.	
New buildings inspected.....	24	Floors concreted, old buildings.....	2
New buildings reinspected.....	34	Wooden floors removed, old buildings.....	2
Basements concreted, new buildings (18,750 square feet).....	17	Buildings razed.....	4
Floors concreted, new buildings (16,250 square feet).....	11	LABORATORY AND RODENT OPERATIONS.	
Yards, etc., concreted, new buildings (1,175 square feet).....	3	Dead rodents received.....	5
Sidewalks concreted (square feet).....	12,475	Rodents trapped and killed.....	295
Total concrete laid, new structures (square feet).....	48,650	Rodents recovered after fumigation.....	39
New buildings elevated.....	4	Total.....	339
New premises rat proofed, concrete.....	28	Rodents examined for plague infection.....	223
Old buildings inspected.....	4	Rodents proven plague infected.....	None.
Premises rat proofed, concrete, old buildings.....	2	Poison distributed, pounds.....	24
		Bodies examined for plague infection.....	1
		Bodies found plague infected.....	None.

## CLASSIFICATION OF RODENTS.

Mus rattus.....	11
Mus alexandrinus.....	104
Mus norvegicus.....	147
Mus musculus.....	77

## WATER FRONT.

Vessels inspected and histories recorded.....	19
Vessels fumigated.....	2
Sulphur used, pounds.....	1,350
New rat guards installed.....	9
Defective rat guards repaired.....	26
Fumigation certificates issued.....	2
Port sanitary statements issued.....	43

The usual day and night patrol was maintained to enforce rat guarding and fending.

## MISCELLANEOUS WORK.

Rat-proofing notices sent to contractors, new buildings.....	20
Letters sent in re rat complaints.....	6
Fishing vessels inspected—medicine chests..	5

## RODENTS EXAMINED IN EVERETT.

Mus norvegicus trapped.....	59
Mus musculus trapped.....	2
Total.....	61
Rodents examined for plague infection.....	49
Rodents proven plague infected.....	None.

## RAT PROOFING OPERATIONS IN EVERETT.

New buildings inspected.....	4
New buildings reinspected.....	4
New buildings concrete foundations.....	1
New buildings elevated.....	2

## RODENTS EXAMINED IN TACOMA.

Mus norvegicus trapped.....	58
Mus alexandrinus.....	2
Total.....	60
Rodents examined for plague infection.....	60
Rodents proven plague infected.....	None.

## HAWAII—HONOLULU—PLAGUE PREVENTION.

The following report of plague-prevention work at Honolulu for the week ended July 1, 1916, was received from Surg. Trotter, of the United States Public Health Service:

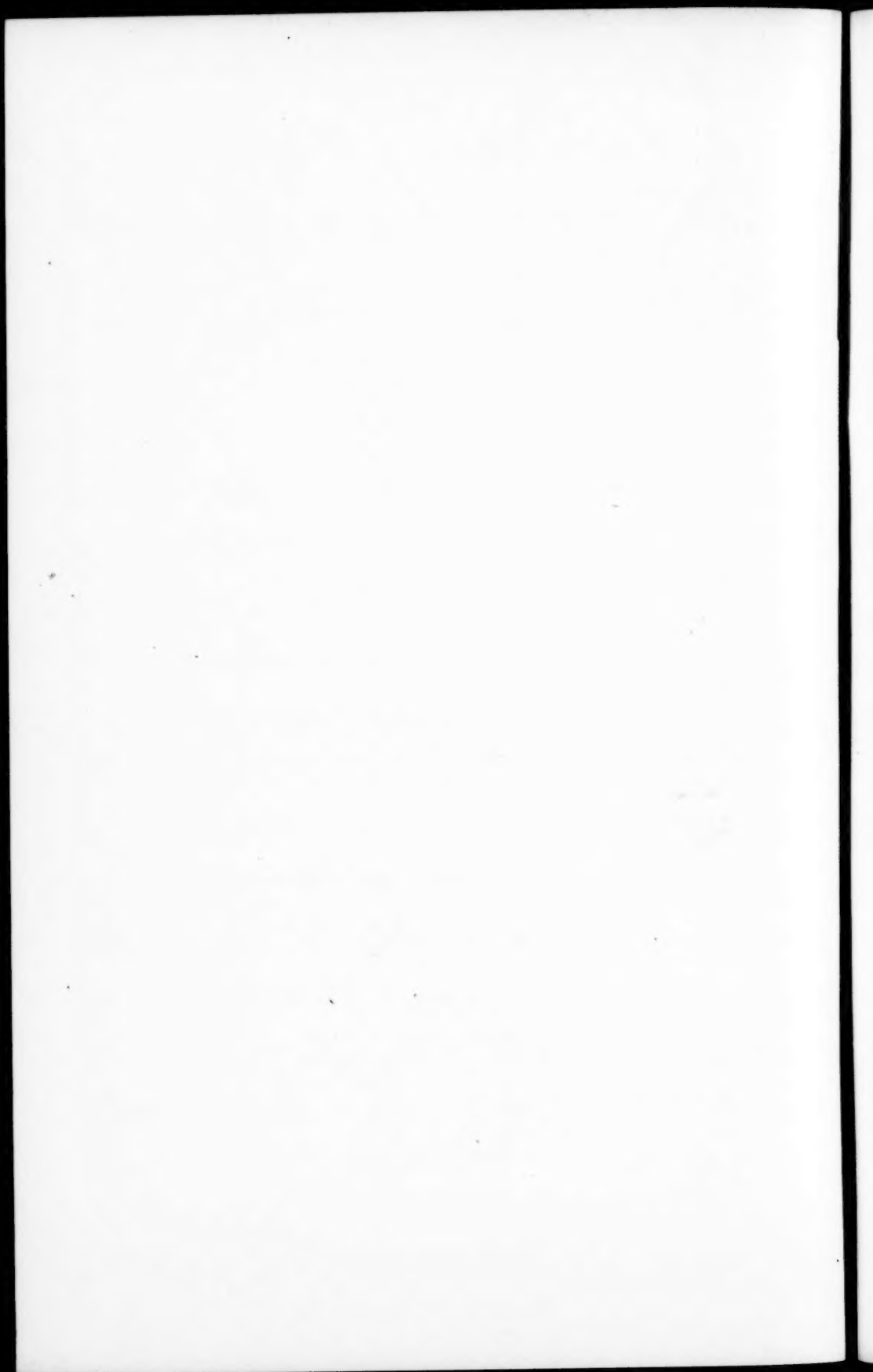
Total rats and mongoose taken.....	284	Classification of rats killed by sulphur dioxide:	
Rats trapped.....	278	Mus alexandrinus.....	1
Mongoose trapped.....	1	Mus musculus.....	4
Rats killed by sulphur dioxide.....	5	Average number of traps set daily.....	984
Examined microscopically.....	235	Cost per rat destroyed.....cents..	27½
Examined macroscopically.....	49	Last case rat plague, Aiea, 9 miles from Honolulu, Apr. 12, 1910.	
Showing plague infection.....	None.	Last case human plague, Honolulu, July 12, 1910.	
Classification of rats trapped:			
Mus alexandrinus.....	113		
Mus musculus.....	120		
Mus norvegicus.....	35		
Mus rattus.....	10		

## PORTO RICO—PLAGUE PREVENTION.

The following table shows the number of rats and mice examined in Porto Rico for plague infection during the two weeks ended July 7, 1916. No plague infection was found.

Place.	Rats.	Mice.
San Juan.....	118	6
Puerta de Tierra.....	2	
Santurce.....	127	4





# PREVALENCE OF DISEASE.

*No health department, State or local, can effectively prevent or control disease without knowledge of when, where, and under what conditions cases are occurring.*

## UNITED STATES.

### RECIPROCAL NOTIFICATION.

#### Minnesota.

*Cases of communicable diseases referred during June, 1916, to other State or provincial health departments by department of health of the State of Minnesota.*

Disease and locality of notification.	Referred to health authority of—	Why referred.
<b>Diphtheria:</b> Minneapolis Health Department, Hennepin County.	Chippewa Falls, Chippewa County, Wis.	Patient went home to Wisconsin without permission of Minneapolis Health Department.
<b>Epidemic cerebrospinal meningitis:</b> Winona, Winona County .....	Redfield, Spink County, S. Dak.; United States Public Health Service.	Body shipped to South Dakota. Father ill there.
<b>Leprosy:</b> Minneapolis, Hennepin County.	Whitefish, Flathead County, Mont.; United States Public Health Service.	Patient returned to home in Montana.
<b>Smallpox:</b> St. Paul Bureau of Health, Ramsey County.	Poplar, Sheridan County, Mont.; Chicago, Milwaukee & St. Paul Ry.	Patient from Montana arrived in Minnesota full with smallpox.
<b>Tuberculosis:</b> Mayo Clinic, Rochester, Olmsted County.	Denver, Denver County, Colo.; New Bedford, Bureau County, Ill.; Poland, St. No. 1, Clay County, Ind.; Bedford, Lawrence County, Ind.; Rake, Winnebago County, Iowa; Dubuque, Dubuque County, Iowa; Fort Dodge, Webster County, Iowa; Boone, Boone County, Iowa; Hampton, Franklin County, Iowa; Newell, Buena Vista County, Iowa; Klein, Musselshell County, Mont.; Brittin, Burleigh County, N. Dak.; Weiston, Hancock County, W. Va.; Basson, Basson County, Wis.; Darlington, Lafayette County, Wis.; Horeb, Dane County, Wis.; Blanchardville, Lafayette County, Wis.; Portage, Columbia County, Wis.; Milwaukee, Milwaukee County, Wis.; Stowe Farm, Saskatchewan, Canada.	6 advanced, 3 moderately advanced, 1 "cured" case left Mayo Clinic for homes, 1 incipient, 5 advanced, 2 moderately advanced, and 2 active cases left Mayo Clinic for homes.
Thomas Hospital, Minneapolis, Hennepin County.	Fort Dodge, Webster County, Iowa; Glasgow, Valley County, Mont.; Clayton, Polk County, Wis.	2 cases died at and 1 advanced case discharged from Thomas Hospital.
Pokegama Sanatorium, Pine County.	Britton, Marshall County, S. Dak.;	2 open cases left Pokegama Sanatorium for homes.
St. Paul Bureau of Health, Ramsey County.	Beresford, Union County, S. Dak.;	1 open case left St. Paul for Wisconsin.
<b>Typhoid fever:</b> Minneapolis Health Department, Hennepin County.	Phillips, Price County, Wis. ....	
	Hankinson, Riceland County, N. Dak.	Patient was living, 3 weeks previous to earliest symptoms, in Hankinson, N. Dak.

**ANTHRAX.****State Reports for June, 1916.**

During the month of June, 1916, there were reported, by States, five cases of anthrax in Massachusetts and one case in New Jersey.

**CEREBROSPINAL MENINGITIS.****State Reports for June, 1916.**

Place.	New cases reported.	Place.	New cases reported.
<b>Massachusetts:</b>		<b>Massachusetts—Continued.</b>	
Bristol County—		Worcester County—	
Fall River.....	1	Worcester.....	1
Essex County—		<b>Total.....</b>	<b>18</b>
Lawrence.....	1		
Lynn.....	1	<b>Minnesota:</b>	
Hampden County—		Winona County—	
Chicopee.....	1	Winona.....	1
Ludlow Township.....	2		
Westfield Township.....	1	<b>South Carolina:</b>	
Middlesex County—		Chesterfield County.....	1
Cambridge.....	1	Pickens County.....	1
Lexington Township.....	1	<b>Total.....</b>	<b>2</b>
Suffolk County—			
Boston.....	8		

**City Reports for Week Ended July 8, 1916.**

Place.	Cases.	Deaths.	Place.	Cases.	Deaths.
Binghamton, N. Y.....	2	1	New Bedford, Mass.....		1
Boston, Mass.....		2	New Britain, Conn.....	1	1
Chicago, Ill.....	1		New York, N. Y.....	13	6
Cincinnati, Ohio.....	2		Philadelphia, Pa.....	1	1
Detroit, Mich.....	1		Pittsburgh, Pa.....		1
Dubuque, Iowa.....		1	Providence, R. I.....		1
Kalamazoo, Mich.....	1		Rockford, Ill.....		1
Kansas City, Mo.....	1	1	St. Louis, Mo.....	1	
Newark, N. J.....	2		Schenectady, N. Y.....	1	

**DIPHTHERIA.**

See Diphtheria, measles, scarlet fever, and tuberculosis, page 2021.

**ERYSIPELAS.****City Reports for Week Ended July 8, 1916.**

Place.	Cases.	Deaths.	Place.	Cases.	Deaths.
Brockton, Mass.....	1		New York, N. Y.....		3
Buffalo, N. Y.....	2	1	Passaic, N. J.....	1	
Chicago, Ill.....	13	1	Philadelphia, Pa.....	2	2
Cincinnati, Ohio.....	1		Pittsburgh, Pa.....	5	
Cleveland, Ohio.....	4		Portland, Oreg.....	2	
Detroit, Mich.....	3	1	Rochester, N. Y.....	2	
Evanston, Ill.....	1		St. Louis, Mo.....	3	
Los Angeles, Cal.....	1		San Francisco, Cal.....	6	
Newark, N. J.....	2		York, Pa.....	1	

## LEPROSY.

## California—San Francisco.

The health officer of San Francisco, Cal., reported July 15, 1916, concerning a case of leprosy as follows: J. H. P., age, 40 years; nativity, United States; resident of San Francisco for the past 7 years; came to this city from Denver, Colo.; has never been out of this country. The patient left for Louisville, Ky., June 7, 1916.

## Louisiana—Mansfield.

During the month of June, 1916, a case of leprosy, in the person of R. W., age 27, male, colored, was reported at Mansfield, La.

## Minnesota—Minneapolis.

During the month of June, 1916, a case of leprosy, in the person of M. H., age 27, male, unmarried, Chinese, was reported at Minneapolis, Minn. The patient is a native of the town of Otage, Japan, has been in the United States for nine years, and has lived in Montana until he came to Minneapolis, March 7, 1916.

Leprous symptoms began during convalescence from a severe burn due to a gasoline explosion at Essex, Mont., in 1911. There is no history of leprosy in the patient's family.

## Montana—Whitefish.

The State health officer of Montana reported, by telegraph, July 22, 1916, that a case of leprosy had been notified at Whitefish, Mont.

## MALARIA.

## State Reports for June, 1916.

Place.	New cases reported.	Place.	New cases reported.
Louisiana.....	142	South Carolina:	
Massachusetts.....	13	Aiken County.....	3
New Jersey:		Beaufort County.....	2
Bergen County.....	2	Marion County.....	32
Essex County.....	7	Richland County.....	2
Hudson County.....	1	Union County.....	2
Mercer County.....	1	York County.....	1
Middlesex County.....	1	Total.....	42
Morris County.....	3		
Somerset County.....	9		
Sussex County.....	21		
Union County.....	3		
Total.....	48		

## MALARIA—Continued.

## City Reports for Week Ended July 8, 1916.

Place.	Cases.	Deaths.	Place.	Cases.	Deaths.
Birmingham, Ala.....	1		New Orleans, La.....	3	1
Chicago, Ill.....		1	Newton, Mass.....	1	
Cleveland, Ohio.....	1		New York, N. Y.....		1
Hartford, Conn.....	1		Orange, N. J.....	2	
Mobile, Ala.....	1		Portsmouth, Va.....		1
Newark, N. J.....	1		San Francisco, Cal.....	1	
New Britain, Conn.....	1		Wichita, Kans.....	1	

## MEASLES.

## Washington—Seattle.

Surg. Boggess reported that during the week ended July 15, 1916, 51 cases of measles were notified in Seattle, Wash., making a total of 5,296 cases, with 9 deaths, reported since the beginning of the outbreak February 15, 1916.

See also Diphtheria, measles, scarlet fever, and tuberculosis, page 2021.

## PELLAGRA.

## State Reports for June, 1916.

Place.	New cases reported.	Place.	New cases reported.
Louisiana.....	53	South Carolina—Continued.	
Massachusetts.....	7	Marion County.....	7
South Carolina:		Orangeburg County.....	1
Abbeville County.....	1	Pickens County.....	3
Anderson County.....	1	Richland County.....	4
Charleston County.....	1	Spartanburg County.....	1
Greenville County.....	3	Sumter County.....	1
Horry County.....	1	York County.....	1
Kershaw County.....	1	Total.....	26

## City Reports for Week Ended July 8, 1916.

Place.	Cases.	Deaths.	Place.	Cases.	Deaths.
Charleston, S. C.....		2	New Orleans, La.....	3	3
Lynchburg, Va.....	1		New York, N. Y.....	1	2
Mobile, Ala.....	1	3	Richmond, Va.....		1
Nashville, Tenn.....	20	1			

## PNEUMONIA.

## City Reports for Week Ended July 8, 1916.

Place.	Cases.	Deaths.	Place.	Cases.	Deaths.
Binghamton, N. Y.....	1	3	Norfolk, Va.....	1	1
Chicago, Ill.....	61	23	Philadelphia, Pa.....	14	10
Cleveland, Ohio.....	9	12	Pittsburgh, Pa.....	9	8
Dubuque, Iowa.....	1	1	Reading, Pa.....	1	
Duluth, Minn.....	1		Rochester, N. Y.....	5	1
Kalamazoo, Mich.....	1	2	San Francisco, Cal.....	8	4
Los Angeles, Cal.....	3		Schenectady, N. Y.....	3	
Manchester, N. H.....	1	1	Stockton, Cal.....	1	
Newark, N. J.....	10	3	Wilkesburg, Pa.....	1	



**POLIOMYELITIS (INFANTILE PARALYSIS).****California.**

*San Francisco.*—Senior Surg. Pierce reported July 25: Two new cases of poliomyelitis recorded during week ended July 24. Total number of cases reported to date, 5.

**Illinois.**

The State health officer of Illinois reported, July 21: Cases of acute poliomyelitis in Illinois confirmed since report of July 18 are: 1 each at Benld, Carrier Mills, Collinsville, near Cherry, Dimmick, Elizabethtown, Frankfort Heights, near Galena, Hinckley (dead), and near Kansas. Chicago, 5 cases. Under investigation: 1 each at Burnt Prairie, Dalton City, Decatur, Duquoin, near Hammond, Kankakee, near Long Creek, near Oregon, near Ottawa, and near Ridge Farm.

*Olive Branch.*—Senior Surg. Gassaway reported, July 22: Second case poliomyelitis at Olive Branch, this county.

**Kansas.**

*Fowler.*—Collaborating Epidemiologist Crumbine reported, July 19: One case poliomyelitis notified from Fowler.

**Louisiana.**

Collaborating Epidemiologist Dowling reported, July 22: Since June 1, 14 cases of infantile paralysis have been officially reported.

**Massachusetts.**

Collaborating Epidemiologist Kelley reported July 22: During the month of July, up to and including July 22, there have been reported to the State department of health 71 cases of acute anterior poliomyelitis. In 8 of these cases the diagnosis is doubtful or negative. The distribution is as follows: Westfield 8, North Adams 7, New Bedford 6, Worcester 5, Fall River 4, Dudley 3, Palmer 3, Springfield 3, Newton 2, Lowell 2, Lawrence 2, Pittsfield 2, Marlboro 2, Webster 2, West Medway 2, Natick 1, Malden 1, Middleboro 1, Woburn 1, Haverhill 1, Sheffield 1, Sharon 1, Hawley 1, West Hanover 1, North Raynham 1, Holyoke 1, Greenfield 1, Boston 1, Norwood 1, North Dartmouth 1, Maynard 1, East Hampton 1, Fairhaven 1. Ten of these cases have either been imported from New York or been in contact with New York cases.

**Michigan.**

*Detroit.*—Senior Surg. Austin reported, July 18: The third case thus far in the city, all cases being of a mild type.

**POLIOMYELITIS (INFANTILE PARALYSIS)—Continued.****Mississippi.**

Collaborating Epidemiologist Stingily reported July 19: The following includes all cases of infantile paralysis reported by the county health officers in June and the additional cases up to date: Bolivar 1, Chickasaw 1, Clay 1, Coahoma 1, Copiah 1, Covington 2, Harrison 2, Hinds 1, Holmes 2, Jackson 2, Jasper 3, Jefferson Davis 2, Lawrence 13, Lee 1, Lincoln 1, Madison 1, Marion 8, Lowndes 15, Noxubee 1, Rankin 2, Scott 6, Simpson 6, Warren 1, Washington 1, Yalobusha 1.

**New Jersey.**

*Perth Amboy.*—Acting Asst. Surg. Naulty reported July 24: Week ending to-day, three new cases poliomyelitis, total to date 7 cases, 1 death.

**New York.**

Pursuant to section 34 of the Interstate Quarantine Regulations, Dr. F. M. Meader, director of the division of communicable diseases, New York State Department of Health, reported July 22 relative to the prevalence of poliomyelitis (infantile paralysis) in the State of New York outside of New York City as follows:

During the month of June 26 cases were reported. So far in July 182 cases have been reported with 23 deaths. Inclosed are two reports which indicate the location of cases up to the 19th instant.

The cases are most numerous on Long Island, particularly in Nassau County. Sporadic cases are appearing in different parts of the southern counties of the State. In Hudson, in Columbia County, apparently, an independent focus has developed. No connection with the New York outbreak has as yet been determined. There are 84 different foci in the State and there are 43 cases which came from New York City. Up to the present, apparently, there have not been many secondary cases from those which came from New York City.

The department has just been given a special appropriation for the handling of the situation. A sanitary supervisor has been transferred to assist on Long Island; two special sanitary supervisors will be appointed next Tuesday. Several diagnosticians will be appointed in several of the counties in the lower part of the State as the situation requires. Three laboratory centers will be established where ample facilities will be afforded for the examination of spinal fluid or any other laboratory tests that it may be desirable to make in order to determine the diagnosis in difficult cases.

## POLIOMYELITIS (INFANTILE PARALYSIS)—Continued.

List of cases of poliomyelitis reported in New York State, exclusive of New York City, to July 19.

JUNE, 1916.

Case No.	Date reported.	Municipality.	County.	Onset.
1.	June 29	Hudson	Columbia	June 22
2.	June 25	do.	do.	June 25
3.	July 3	do.	do.	June 29
4.	June 13	do.	do.	June 4
5.	do.	do.	do.	June 5
6.	do.	do.	do.	June 7
7.	June 28	do.	do.	June 17
8.	do.	do.	do.	June 24
9.	July 1	Greenport	do.	June 27
10.	June 30	Beacon	Dutchess	June 28
11.	do.	do.	do.	Do.
12.	June 29	do.	do.	June 26
13.	July 4	No. Hempstead	Nassau	June 23
14.	July 3	do.	do.	June 29
15.	July 1	Jasper	Steuben	June 27
16.	June 27	Babylon	Suffolk	Do.
17.	July 5	Hornell	Steuben	Do.
18.	June 26	Kingston	Ulster	June 24
19.	July 5	Farmingdale	Nassau	June 23
20.	do.	do.	do.	June 26
21.	do.	do.	do.	June 25
22.	do.	Amityville	Suffolk	June 29
23.	do.	Hudson	Columbia	June 30
24.	do.	do.	do.	June 25
25.	July 7	do.	do.	May —
26.	July 10	T. Fallsburgh	Sullivan	June 26

JULY, 1916.

1.	July 3	Hudson	Columbia	July 1
2.	July 4	do.	do.	Do.
3.	do.	Beacon	Dutchess	Do.
4.	do.	Farmingdale	Nassau	Do.
5.	do.	do.	do.	Do.
6.	July 5	No. Hempstead	do.	July 3
7.	do.	do.	do.	July 5
8.	July 5	Yonkers	Westchester	
9.	July 3	T. Warwick	Orange	July 2
10.	July 5	Copaugue	Suffolk	July 1
11.	July 6	do.	do.	July 1
12.	July 4	Fishkill	Dutchess	July 2
13.	July 7	Huntington	Suffolk	July 3
14.	do.	Hudson	Columbia	July 5
15.	do.	Ardley	Westchester	July 1
16.	do.	Roslyn	Nassau	July 7
17.	do.	Glen Cove	do.	Do.
18.	July 8	Phillipstown	Putnam	July 1
19.	July 6	Albany	Albany	July 6
20.	July 5	Albany	Albany	July 5
21.	July 7	Poughkeepsie	Dutchess	
22.	July 8	T. Livingston	Columbia	July 4
23.	do.	Glen Cove Orchard	Nassau	July 8
24.	do.	do.	do.	Do.
25.	July 10	Potsdam	St. Lawrence	July 10
26 (died)	do.	T. Lloyd	Ulster	July 8
27.	July 7	Garden City Park	Nassau	July 7
28 (died)	July 8	Claverack	Columbia	July 3
29 (died)	July 9	Newfane	Niagara	July 6
30.	do.	do.	do.	July 5
31 (died)	July 7	Callicoon	Sullivan	July 0
32.	July 5	Farmingdale	Nassau	July 3
33.	do.	do.	do.	July 5
34.	do.	do.	do.	Do.
35.	July 9	Croton on Hudson	Westchester	May 10
36.	July 6	Cornwall on Hudson	Orange	July 6
37.	July 9	Garden City Park	Nassau	July 9
38 (died)	do.	do.	do.	July 8
39.	July 10	Amsterdam	Montgomery	July 4
40.	do.	Corning	Steuben	July 5
41.	do.	T. Warwick	Orange	July 10
42.	do.	Dickinson	Franklin	Do.

<sup>1</sup> Not poliomyelitis.

July 28, 1916

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**POLIOMYELITIS (INFANTILE PARALYSIS)—Continued.***List of cases of poliomyelitis reported in New York State, exclusive of New York City, to July 19—Continued.*

JULY, 1916—Continued.

Case No.	Date reported.	Municipality.	County.	Onset.
43.	July 10	Kingston.	Ulster.	July 7
44.	do.	Sidney.	Delaware.	July 8
45.	July 9	Glen Cove Orchard.	Nassau.	Do.
46.	do.	do.	do.	July 7
47.	do.	do.	do.	July 8
48 (died).	do.	Argyle.	Washington.	July 7
49.	July 11	Farmingdale.	Nassau.	July 5
50.	July 12	Greenfield.	Saratoga.	July 6
51.	July 11	Mount Vernon.	Westchester.	Do.
52.	do.	Lynbrook.	Nassau.	July 10
53.	do.	Utica.	Oneida.	July 11
54.	do.	Hudson.	Columbia.	July 6
55.	do.	Cortland.	Cortland.	July 3
56.	July 12	Central Valley.	Orange.	July 12
57.	do.	Glen Cove Orchard.	Nassau.	July 9
58.	do.	Utica.	Oneida.	Do.
59 (died).	do.	Floral Park.	Nassau.	Do.
60 (died).	July 11	Oneonta.	Otsego.	July 6
61.	July 12	Hudson.	Columbia.	July 10
62.	do.	Greenfield.	Saratoga.	Do.
63.	do.	Olive.	Ulster.	July 9
64.	do.	Yonkers.	Westchester.	July 12
65.	July 13	Brookhaven.	Suffolk.	Do.
66.	July 12	Hartsdale.	Westchester.	Do.
67.	July 13	Beekman.	Dutchess.	July 7
68.	do.	Warwick.	Orange.	Do.
69 (died).	do.	T. Rochester.	Ulster.	Do.
70.	July 14	Roslyn.	Nassau.	July 10
71.	July 13	Ossining.	Westchester.	July 8
72.	do.	do.	do.	Do.
73.	do.	do.	do.	July 7
74.	July 14	Kingston.	Ulster.	Do.
75 (died).	do.	Coxsackie.	Greene.	July 11
76.	do.	Freeport.	Nassau.	July 12
77 (died).	July 15	Easthampton.	Suffolk.	July 7
78.	do.	Poughkeepsie.	Dutchess.	Do.
79.	do.	Hoosick Falls.	Rensselaer.	July 8
80 (died).	do.	Rockville Center.	Nassau.	July 12
81.	do.	Rochester.	Monroe.	Do.
82.	July 17	Athens.	Greene.	July 14
83.	do.	Farmingdale.	Nassau.	July 12
84.	do.	New Hamburg.	Dutchess.	Do.
85.	do.	Roslyn.	Nassau.	July 13
86.	do.	Port Chester.	Westchester.	July 14
87.	July 16	Glenville.	Schenectady.	July 8
88.	July 14	Hudson.	Columbia.	July 12
89.	July 17	Farmingdale.	Nassau.	July 14
90.	do.	Stuyvesant.	Columbia.	July 13
91 (died).	do.	Saugerties.	Ulster.	July 14
92.	do.	T. Fallsburgh.	Sullivan.	July 11
93.	do.	Copague.	Suffolk.	July 9
94.	do.	Amityville.	do.	July 6
95.	do.	Ithaca.	Tompkins.	July 15
96.	do.	Mamaroneck.	Westchester.	July 16
97.	do.	Hamburg.	Erie.	Do.
98 (died).	do.	Buffalo.	do.	Do.
99.	do.	Roslyn.	Nassau.	July 10
100.	do.	Geneva.	Ontario.	July 14
101.	do.	T. Greenburgh.	Westchester.	Do.
102.	do.	do.	do.	July 13
103 (died).	do.	Lynbrook.	Nassau.	July 14
104.	do.	Hempstead.	do.	July 9
105.	do.	Glen Cove.	do.	July 16
106.	July 16	Fishkill.	Dutchess.	July 18
107.	July 15	Lyndenhurst.	Suffolk.	July 13
108.	do.	Copague.	do.	Do.
109.	July 16	Farmingdale.	Nassau.	July 15
110.	do.	Southold.	Suffolk.	July 11
111.	July 18	Rockville Center.	Nassau.	July 15
112 (died).	do.	Van Etten.	Chemung.	July 16
113 (died).	do.	East Islip.	Suffolk.	Do.
114.	do.	Binghamton.	Broome.	Do.
115.	do.	Saratoga Springs.	Saratoga.	July 1

\* Not poliomyelitis.

**POLIOMYELITIS (INFANTILE PARALYSIS)**—Continued.

*List of cases of poliomyelitis reported in New York State, exclusive of New York City, to July 19—Continued.*

JULY, 1916—Continued.

Case No.	Date reported.	Municipality.	County.	Onset.
116.....	July 17	Hudson.....	Columbia.....	July 14
117.....	..do..	..do..	..do..	July 15
118.....	..do..	Andover.....	Allegany.....	July 4
119.....	..do..	Lynbrook.....	Nassau.....	July 16
120.....	July 18	Coldenham.....	Orange.....	.....
121.....	July 19	Glen Cove.....	Nassau.....	.....
122.....	July 17	West Babylon.....	Suffolk.....	July 6
123 (died).....	July 18	Yonkers.....	Westchester.....	July 8
124.....	..do..	..do..	..do..	Do.
125.....	..do..	..do..	..do..	Do.
126.....	..do..	..do..	..do..	July 12
127.....	..do..	..do..	..do..	July 15
128.....	..do..	..do..	..do..	Do.
129.....	..do..	..do..	..do..	Do.
130.....	July 16	Bedford.....	Erie.....	Do.
131 (died).....	July 17	Buffalo.....	Sullivan.....	July 12
132.....	July 18	T. Fallsburgh.....	Ulster.....	.....
133.....	July 19	Gloversville.....	Fulton.....	July 18
134.....	July 18	Claverack.....	Columbia.....	July 14
135.....	July 19	Glen Cove.....	Nassau.....	.....
136.....	..do..	New Rochelle.....	Westchester.....	.....
137.....	July 20	Nyack.....	Roc. land.....	.....
138.....	July 19	Armonk.....	Westchester.....	.....
139.....	July 18	Fallsburgh.....	Sullivan.....	July 14
140.....	July 19	Oyster Bay.....	Nassau.....	July 16
141.....	..do..	Poughkeepsie.....	Dutchess.....	.....
142.....	..do..	..do..	..do..	.....

*New York City.*—Surg. Lavinder reported July 18: New cases poliomyelitis 121, deaths 26. July 19: 142 new cases, 30 deaths. July 20: New cases 119, deaths 31. July 22: New cases 135, deaths 30. July 24: New cases yesterday 115, deaths 23, new cases to-day 89, deaths 31. July 25: New cases 150, deaths 38. Brooklyn cases decreasing steadily. July 26: New cases 162, deaths 35, approximate totals 3,168 cases, 685 deaths. Both Manhattan and Queens are showing decided increases.

**North Carolina.**

The State health officer of North Carolina reported, July 20: I have found several sporadic cases of infantile paralysis in different parts of the State.

**Pennsylvania.**

*Pittsburgh.*—Surg. Schereschewsky reported, July 21: Additional case poliomyelitis reported to-day. July 24: Another case reported; 4 cases to date; 1 death.

**Rhode Island.**

Passed Asst. Surg. Marshall reported, July 24: The presence of poliomyelitis in the State of Rhode Island is as follows: Providence 5 cases with 1 death, Newport 5 cases, Bristol 3 cases with 1 death, Pawtucket 1 case, Westerly 1, Woonsocket 1, Tiverton 1. The two deaths occurred in families recently arrived from New York City.



**POLIOMYELITIS (INFANTILE PARALYSIS)—Continued.****Tennessee.**

*Memphis.*—Acting Asst. Surg. Robinson reported, July 22: Two cases poliomyelitis reported in Memphis.

**State Reports for June, 1916.**

Place.	New cases reported.	Place.	New cases reported.
<b>Louisiana:</b>		<b>Michigan:</b>	
Iberia Parish.....	1	Kent County—	
Morehouse Parish.....	1	Cedar Springs.....	1
Richland Parish.....	1	Grand Rapids.....	1
St. Mary Parish.....	1	Lapeer County—	
Vermilion Parish.....	1	Goodland Township.....	1
West Baton Rouge Parish.....	1	Oceana County—	
Total.....	6	Crystal Township.....	1
		Total.....	4
<b>Massachusetts:</b>		<b>Minnesota:</b>	
Bristol County—		Ramsey County—	
Fall River.....	1	St. Paul.....	2
New Bedford.....	2	Stearns County—	
Westport Township.....	1	Rockville.....	1
<b>Essex County—</b>		Total.....	3
Salem.....	1	<b>New Jersey:</b>	
<b>Middlesex County—</b>		Essex County.....	2
Newton.....	1	Hudson County.....	2
Somerville.....	1	Total.....	4
<b>Worcester County—</b>			
Clinton Township.....	1		
Hardwick Township.....	1		
Worcester.....	1		
Total.....	10		

**City Reports for Week Ended July 8, 1916.**

Place.	Cases.	Deaths.	Place.	Cases.	Deaths.
Akron, Ohio.....	1		Newark, N. J.....	14	2
Albany, N. Y.....	2		New Bedford, Mass.....	1	
Baltimore, Md.....	1	1	Newport, R. I.....	2	
Birmingham, Ala.....	1		New York, N. Y.....	535	126
Boston, Mass.....	1		Perth Amboy, N. J.....	1	
Chicago, Ill.....	2	1	Philadelphia, Pa.....	2	
Cleveland, Ohio.....	4		Pittsburgh, Pa.....	1	
Columbus, Ohio.....	1		Providence, R. I.....	1	
Haverhill, Mass.....	1		St. Louis, Mo.....	1	
Jersey City, N. J.....	4		St. Paul, Minn.....	1	
Lawrence, Mass.....	1		Toledo, Ohio.....	2	
Los Angeles, Cal.....	1		West Hoboken, N. J.....	3	1
Lowell, Mass.....	1		Worcester, Mass.....	1	

**RABIES IN MAN.****City Reports for Week Ended July 8, 1916.**

During the week ended July 8, 1916, there was reported one fatal case of rabies in man at Danville, Ill.

**RABIES IN ANIMALS.****Idaho—Kimama.**

The health officer of Idaho reported by telegraph July 24, 1916, that a case of rabies in a dog had been notified at Kimama, Lincoln County, Idaho.

**City Reports for Week Ended July 8, 1916.**

During the week ended July 8, 1916, there were reported by cities four cases of rabies in animals: One case at Danville, Ill., one case at Los Angeles, Cal., and two cases at St. Paul, Minn.

**ROCKY MOUNTAIN SPOTTED FEVER.****Washington—Harrington.**

Collaborating Epidemiologist Tuttle reported by telegraph July 19, 1916, that a case of Rocky Mountain spotted fever had been notified at Harrington, Lincoln County, Wash.

**SCARLET FEVER.**

See Diphtheria, measles, scarlet fever, and tuberculosis, page 2021.

**SMALLPOX.****Minnesota.**

Collaborating Epidemiologist Bracken reported by telegraph that during the week ended July 22, 1916, two new foci of smallpox infection were reported in Minnesota, cases of the disease having been notified as follows: Carver County, Watertown Township, 1; Freeborn County, London Township, 1.

**Porto Rico.**

Surg. King reported by telegraph that during the two weeks period ended July 16, 1916, additional cases of smallpox were notified in Porto Rico as follows: Bayamon, 1; San Juan, 3.

**Washington—Seattle.**

Surg. Boggess reported that during the week ended July 8, 1916, one case of smallpox was notified in Seattle, Wash., making a total of 63 cases reported since May 29, 1916.

## SMALLPOX—Continued.

## State Reports for June, 1916.

Place.	New cases reported.	Deaths.	Vaccination history of cases.			
			Number vaccinated within 7 years preceding attack.	Number last vaccinated more than 7 years preceding attack.	Number never successfully vaccinated.	Vaccination history not obtained or uncertain.
Massachusetts:						
Worcester County—						
Fitchburg.....	1				1	
Michigan:						
Barry County—						
Hastings Township.....	2				2	
Hastings.....	2				2	
Gratiot County—						
Breckenridge.....	7				7	
Hillsdale County—						
Amboy Township.....	2				2	
Hillsdale.....	1				1	
Ingham County—						
Lansing.....	4				4	
Jackson County—						
Concord Township.....	1				1	
Kalamazoo County—						
Kalamazoo.....	1				1	
Lenawee County—						
Ridgeway Township.....	3				3	
Macomb County—						
Macomb Township.....	2				2	
Monroe County—						
Monroe.....	1			1		
Oakland County—						
Orion.....	1		1			
Royal Oak.....	1		1			
Presque Isle County—						
Rogers.....	4		4			
St. Clair County—						
Port Huron.....	1				1	
Schoolcraft County—						
Manistique.....	1		1			
Shiawassee County—						
Owosso.....	1				1	
Wayne County—						
Highland Park.....	6				3	3
Wyandotte.....	1				1	
Total.....	12		7	1	31	3
Minnesota:						
Blue Earth County—						
Mankato.....	5				5	
Mankato Township.....	1				1	
Brown County—						
Sleepy Eye.....	2				2	
Faribault County—						
Minnesota Lake.....	3				3	
Fillmore County—						
York Township.....	1				1	
Goodhue County—						
Red Wing.....	1			1		
Hennepin County—						
Minneapolis.....	18			1	17	
Excelsior Township.....	2				2	
Minnetonka Township.....	6				5	1
Hubbard County—						
Mantrap Township.....	1				1	
Jackson County—						
Rost Township.....	3				3	
Kandiyohi County—						
Willmar.....	1				1	
Lac qui Parle County—						
Madison.....	5		4		1	
Lake County—						
Two Harbors.....	1				1	
Martin County—						
Lake Fremont Town- ship.....	1				1	

## SMALLPOX—Continued.

## State Reports for June, 1916—Continued.

Place.	New cases reported.	Deaths.	Vaccination history of cases.			
			Number vaccinated within 7 years preceding attack.	Number last vaccinated more than 7 years preceding attack.	Number never successfully vaccinated.	Vaccination history not obtained or uncertain.
<b>Minnesota—Continued.</b>						
Nicollet County—						
North Mankato.....	2				2	
Nobles County—						
Little Rock Township..	1				1	
Norman County—						
Halstad.....	1				1	
Strand Township.....	2				2	
Olmsted County—						
Rochester.....	2				2	
Ramsey County—						
St. Paul.....	17				17	
St. Louis County—						
Duluth.....	9			5	4	
Virginia.....	4				4	
Stearns County—						
St. Joseph.....	7				7	
Todd County—						
Long Prairie.....	2				2	
Yellow Medicine County—						
Granite Falls.....	1				1	
Total.....	90		4	7	87	1

## Miscellaneous State Reports.

Place.	Cases.	Deaths.	Place.	Cases.	Deaths.
<b>Louisiana (June 1-30):</b>			<b>New Jersey (June 1-30):</b>		
Parishes—			Counties—		
Caddo.....	5		Camden.....	2	
Calcasieu.....	2		Monmouth.....	1	
Caldwell.....	1		Total.....	3	
Iberia.....	1		<b>South Carolina (June 1-30):</b>		
Richland.....	1		Counties—		
Tangipahoa.....	1		Aiken.....	1	
Terrebonne.....	6		Charleston.....	2	
Vermilion.....	1		Florence.....	3	
Total.....	18		Orangeburg.....	1	
			Total.....	7	

## City Reports for Week Ended July 8, 1916.

Place.	Cases.	Deaths.	Place.	Cases.	Deaths.
Chicago, Ill.....	2		Little Rock, Ark.....	2	
Cincinnati, Ohio.....	1		Milwaukee, Wis.....	3	
Detroit, Mich.....	19		Muscatine, Iowa.....	1	
Duluth, Minn.....	1		New Orleans, La.....	2	
Elgin, Ill.....	1		Oshkosh, Wis.....	1	
Grand Rapids, Mich.....	1		Sioux City, Iowa.....	2	
Kansas City, Kans.....	4		Springfield, Ill.....	5	
Kansas City, Mo.....	3		Superior, Wis.....	1	
Kokomo, Ind.....	6		Toledo, Ohio.....	3	
Lexington, Ky.....	1		Wichita, Kans.....	3	

## TETANUS.

## Massachusetts Report for June, 1916.

During the month of June, 1916, there were four cases of tetanus reported in Massachusetts.

## City Reports for Week Ended July 8, 1916.

Place.	Cases.	Deaths.	Place.	Cases.	Deaths.
Chicago, Ill.		1	Milwaukee, Wis.		1
Cincinnati, Ohio.		1	New York, N. Y.		2
Fort Worth, Tex.	1	1	Rockford, Ill.		1
Los Angeles, Cal.	1	1	St. Louis, Mo.	1	1
Lowell, Mass.	1				

## TUBERCULOSIS.

See Diphtheria, measles, scarlet fever, and tuberculosis, page 2021.

## TYPHOID FEVER.

## State Reports for June, 1916.

Place.	New cases reported.	Place.	New cases reported.
<b>Louisiana:</b>		<b>Massachusetts:</b>	
Acadia Parish	2	Berkshire County—	
Allen Parish	3	Pittsfield	1
Ascension Parish	6	Bristol County—	
Assumption Parish	1	Attleboro	1
Avoyelles Parish	7	Fall River	18
Bienville Parish	2	New Bedford	6
Bossier Parish	1	Taunton	1
Caddo Parish	7	North Attleboro Township	1
Calcasieu Parish	2	Essex County—	
Concordia Parish	3	Beverly	2
De Soto Parish	5	Haverhill	1
East Baton Rouge Parish	14	Newburyport	1
East Feliciana Parish	1	Lawrence	4
Evangeline Parish	4	Middlesex County—	
Grant Parish	3	Arlington Township	1
Iberia Parish	5	Cambridge	2
Iberville Parish	3	Everett	1
Jackson Parish	2	Lowell	4
Jefferson Davis Parish	2	Malden	1
Lafayette Parish	7	Newton	2
Morehouse Parish	6	Somerville	1
Plaquemine Parish	10	Westford Township	1
Pointe Coupee Parish	7	Norfolk County—	
Rapides Parish	2	Wellesley Township	1
Red River Parish	1	Plymouth County—	
Richland Parish	4	Bridgewater Township	1
Sabine Parish	2	East Bridgewater Township	1
St. Charles Parish	1	West Bridgewater Township	1
St. Helena Parish	1	Middleboro Township	1
St. James Parish	6	Suffolk County—	
St. John Parish	1	Boston	7
St. Landry Parish	6	Worcester County—	
St. Martin Parish	1	Clinton Township	1
St. Mary Parish	5	Fitchburg	3
St. Tammany Parish	4	Gardner Township	1
Tangipahoa Parish	4	Templeton Township	2
Tensas Parish	1	Worcester	1
Terrebonne Parish	20	Total	69
Union Parish	2		
Vermilion Parish	10		
Vernon Parish	1		
Winn Parish	2		
Total	177		
		<b>Michigan:</b>	
		Alcona County—	
		Caledonia Township	1
		Allegan County—	
		Allegan	1



## TYPHOID FEVER—Continued.

## State Reports for June, 1916—Continued.

Place.	New cases reported.	Place.	New cases reported.
<b>Michigan—Continued.</b>		<b>Minnesota—Continued.</b>	
Benzie County—		Koochiching County—	
Blaine Township.....	1	International Falls.....	1
Berrien County—		Lyon County—	
Chickaming Township.....	1	Marshall.....	7
Niles.....	1	Lynd Township.....	2
Chippewa County—		Marshall County—	
Sault Ste. Marie.....	2	Valley Township.....	1
Genesee County—		Martin County—	
Flint.....	8	Fairmont.....	1
Grand Traverse County—		Mille Lacs County—	
Traverse City.....	1	Princeton.....	1
Ionia County—		Olmsted County—	
Orange Township.....	1	Rochester.....	1
Iron County—		Otter Tail County—	
Crystal Falls.....	1	Fergus Falls.....	1
Iosco County—		Polk County—	
East Tawas.....	1	Beltrami.....	1
Kalamazoo County—		Pope County—	
Kalamazoo.....	2	Lowry.....	1
Kent County—		Ramsey County—	
Sparta.....	1	St. Paul.....	3
Grand Rapids.....	2	St. Louis County—	
Livingston County—		Duluth.....	4
Howell.....	1	Ely.....	3
Macomb County—		Eveleth.....	1
New Baltimore.....	1	Hibbing.....	1
Manistee County—		Stearns County—	
Manistee.....	1	St. Cloud.....	1
Marquette County—		Sauk Center.....	1
Tilden Township.....	1	Todd County—	
Marquette.....	2	Wykeham Township.....	1
Negaunee.....	17	Wabasha County—	
Mecosta County—		Plainview.....	1
Chippewa Township.....	1	Washington County—	
Midland County—		Stillwater.....	1
Homer Township.....	1	Wright County—	
Monroe County—		Monticello.....	1
Bedford Township.....	1	Rockford.....	1
Montmorency County—		Yellow Medicine County—	
Briley Township.....	1	Clarkfield.....	1
Oakland County—		Total.....	65
Pontiac.....	1		
Saginaw County—		<b>New Jersey:</b>	
Birch Run Township.....	2	Atlantic County.....	3
Humfield Township.....	1	Bergen County.....	3
St. Charles.....	1	Burlington County.....	3
Saginaw.....	3	Camden County.....	17
St. Joseph County—		Cumberland County.....	2
Park Township.....	2	Essex County.....	25
Tuscola County—		Gloucester County.....	4
Gilford Township.....	1	Hudson County.....	5
Washtenaw County—		Hunterdon County.....	1
Ann Arbor.....	1	Mercer County.....	6
Wayne County—		Middlesex County.....	2
Wyandotte.....	2	Monmouth County.....	4
Wexford County—		Morris County.....	3
Cadillac.....	2	Passaic County.....	7
Total.....	67	Salem County.....	1
		Union County.....	8
<b>Minnesota:</b>		Warren County.....	1
Benton County—		Total.....	95
Glendora Township.....	1		
Blue Earth County—		<b>South Carolina:</b>	
Mankato.....	3	Abbeville County.....	1
Carlton County—		Aiken County.....	3
Cloquet.....	1	Anderson County.....	8
Cottonwood County—		Beaufort County.....	2
Windom.....	1	Charleston County.....	38
Dakota County—		Cherokee County.....	1
Hastings.....	1	Chester County.....	2
Hennepin County—		Chesterfield County.....	2
Minneapolis.....	20	Clarendon County.....	2
Itasca County—		Darlington County.....	4
Coleraine.....	1		

## TYPHOID FEVER—Continued.

## State Reports for June, 1916—Continued.

Place.	New cases reported.	Place.	New cases reported.
South Carolina—Continued.		South Carolina—Continued.	
Dillon County.....	3	Oconee County.....	4
Dorchester County.....	4	Orangeburg County.....	3
Edgefield County.....	1	Pickens County.....	2
Fairfield County.....	2	Richland County.....	26
Florence County.....	5	Spartanburg County.....	1
Greenville County.....	20	Sumter County.....	21
Greenwood County.....	2	Union County.....	2
Hampton County.....	1	Williamsburg County.....	3
Lexington County.....	1	York County.....	2
Marion County.....	3	Total.....	188
Marlboro County.....	3		
Newberry County.....	16		

## City Reports for Week Ended July 8, 1916.

Place.	Cases.	Deaths.	Place.	Cases.	Deaths.
Alameda, Cal.....	1		Morristown, N. J.....	1	
Albany, N. Y.....	1		Nashville, Tenn.....	15	3
Allentown, Pa.....	3		Newark, N. J.....	3	2
Atlantic City, N. J.....	5		New Bedford, Mass.....	3	
Baltimore, Md.....	11	2	New Castle, Pa.....	3	
Beaver Falls, Pa.....	1		New London, Conn.....	1	
Birmingham, Ala.....	174	8	New Orleans, La.....	3	1
Boston, Mass.....	2		Newton, Mass.....	1	
Cambridge, Mass.....	1		New York, N. Y.....	27	4
Camden, N. J.....	1		Norfolk, Va.....	9	
Charleston, S. C.....	14		Oakland, Cal.....	1	
Chelsea, Mass.....	2		Oklahoma, Okla.....	4	
Chicago, Ill.....	12		Orange, N. J.....	2	1
Cincinnati, Ohio.....	1		Philadelphia, Pa.....	15	4
Cleveland, Ohio.....	2		Pittsburg, Pa.....	2	2
Coffeyville, Kans.....	1		Providence, R. I.....	4	1
Columbia, S. C.....	4		Reading, Pa.....	2	
Columbus, Ohio.....	4	1	Roanoke, Va.....	1	
Covington, Ky.....	1		Rochester, N. Y.....	1	
Danville, Ill.....	2		Rockford, Ill.....	1	
Denver, Colo.....	5	2	Saginaw, Mich.....	5	
Detroit, Mich.....	6	1	St. Louis, Mo.....	3	
Elgin, Ill.....	3	1	St. Paul, Minn.....	1	1
Erie, Pa.....	1		Salt Lake City, Utah.....	2	
Fall River, Mass.....	6		San Diego, Cal.....	2	
Fort Worth, Tex.....	4		San Francisco, Cal.....	4	
Galveston, Tex.....	5	1	Schenectady, N. Y.....	1	
Grand Rapids, Mich.....	1		Springfield, Ill.....	1	
Harrisburg, Pa.....	1		Springfield, Mass.....	2	
Hartford, Conn.....	2		Stockton, Cal.....	1	
Jersey City, N. J.....	1		Syracuse, N. Y.....	1	
Kalamazoo, Mich.....	2		Tacoma, Wash.....	1	
Kansas City, Mo.....	1	3	Toledo, Ohio.....	5	
Lexington, Ky.....	4		Troy, N. Y.....	4	
Little Rock, Ark.....	4		Washington, D. C.....	3	1
Los Angeles, Cal.....	8	1	Wheeling, W. Va.....	1	
Lynchburg, Va.....	1		Wichita, Kans.....	7	1
Milwaukee, Wis.....	1		Winston-Salem, N. C.....	14	

## TYPHUS FEVER.

## Texas—El Paso.

Acting Asst. Surg. Tappan, reported that a case of typhus fever was notified at El Paso, Tex., July 20, 1916, in the person of J. A., male, age 14 years, resident of El Paso 3 years, taken sick at 706 South Oregon Street.

## DIPHTHERIA, MEASLES, SCARLET FEVER, AND TUBERCULOSIS.

## State Reports for June, 1916.

State.	Cases reported.			State.	Cases reported.		
	Diphtheria.	Measles.	Scarlet fever.		Diphtheria.	Measles.	Scarlet fever.
Louisiana.....	12	38	13	Minnesota.....	159	892	361
Massachusetts.....	598	4,186	461	New Jersey.....	459		465
Michigan.....	387	1,317	339	South Carolina.....	8	29	22

## City Reports for Week Ended July 8, 1916.

City.	Population as of July 1, 1915. (Estimated by United States Census Bureau.)	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuberculosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Over 500,000 inhabitants:										
Baltimore, Md.	584,605		16		46		15	1	32	22
Boston, Mass.	745,139	215	45	4	202	5	14		65	23
Chicago, Ill.	2,447,045	526	76	7	98	1	79	2	158	62
Cleveland, Ohio.	656,975	154	24		55		8		39	22
Detroit, Mich.	554,717		52	3	8		12	1	17	12
New York, N. Y.	5,468,190	1,345	330	21	560	13	94	1	342	127
Philadelphia, Pa.	1,683,664	399	42	7	88	4	15		125	48
Pittsburgh, Pa.	571,984	150	6	1	77	2	9		12	10
St. Louis, Mo.	745,988	211	18	2	80	2	5		33	12
From 300,000 to 500,000 inhabitants:										
Buffalo, N. Y.	461,335	143	7	1	10		12	2	27	10
Cincinnati, Ohio.	406,706		11		7	1			28	19
Jersey City, N. J.	300,133	55	19	2	7		25		20	13
Los Angeles, Cal.	465,367	95	4		25		1		47	15
Milwaukee, Wis.	428,062	95	2		12		15		17	
Newark, N. J.	369,000	105	19	1	64	2	21		45	15
New Orleans, La.	366,484	119	2		36				29	20
San Francisco, Cal.	416,912	112	27	1	8		9		28	10
Washington, D. C.	358,679	115	3		124		2		26	13
From 200,000 to 300,000 inhabitants:										
Columbus, Ohio.	209,722	66	3		29	2	3		9	5
Denver, Colo.	253,161				28		2			11
Kansas City, Mo.	289,879		4		9		9	1		5
Portland, Ore.	272,833	47	3		5		9	1	1	4
Providence, R. I.	250,025	67	7		13		4			12
Rochester, N. Y.	250,747	78	3		76		2		12	6
St. Paul, Minn.	241,999	51	9	1	27		2		6	6
From 100,000 to 200,000 inhabitants:										
Albany, N. Y.	103,580		2		13		4		11	
Birmingham, Ala.	174,108	44			1		1		4	3
Bridgeport, Conn.	118,434	43	7		10	1	1		5	1
Cambridge, Mass.	111,609		4		20				5	6
Camden, N. J.	104,349		5		2				4	
Fall River, Mass.	126,901		1		10		1		10	1
Grand Rapids, Mich.	125,759	27	1		8		5			2
Hartford, Conn.	108,969		6		6		2		6	2
Lowell, Mass.	112,124	29		1	66		2		5	3
Lynn, Mass.	100,316	16	2		1		1		8	1
Nashville, Tenn.	115,978	45	1		17				5	1
New Bedford, Mass.	114,694	37	1		23		1		2	4
New Haven, Conn.	147,065		1		2				5	4
Oakland, Cal.	190,803		1	1	2		1			36
Omaha, Nebr.					8		7			3
Reading, Pa.	105,094	31	1		3		2		4	3
Richmond, Va.	154,674				45	1	3		2	5
Salt Lake City, Utah.	113,567	21			116		6	1		1
Springfield, Mass.	103,216	20	4		31		2	1	3	1
Syracuse, N. Y.	152,534		3		16		4		8	9
Tacoma, Wash.	108,094	25			18		2			
Toledo, Ohio.	187,840	58	6		14		4		1	4
Trenton, N. J.	109,212	27	4				1		8	3
Worcester, Mass.	160,523	60		1	22	2		3		

\* Population Apr. 15, 1913; no estimate made.

## DIPHTHERIA, MEASLES, SCARLET FEVER, AND TUBERCULOSIS—Contd.

City Reports for Week Ended July 8, 1916—Continued.

City.	Population as of July 1, 1915. (Es- timated by United States Census Bureau.)	Total deaths from all causes.	Diph- theria.		Measles.		Scarlet fever.		Tubercu- losis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
From 50,000 to 100,000 inhabitants:										
Akron, Ohio.	82,958	51	4	1	1		3		5	4
Allentown, Pa.	61,901		3		5				6	
Atlantic City, N. J.	55,806	11	1		8		6		8	
Bayonne, N. J.	67,582		2		11		1		3	
Berkeley, Cal.	54,879	8								
Binghamton, N. Y.	53,082	23	3	1	25				1	1
Brockton, Mass.	65,746	17		1	1				5	2
Canton, Ohio.	59,139	13			4		1		3	1
Charleston, S. C.	60,427	29			1					1
Covington, Ky.	56,520	11			3		3		2	2
Duluth, Minn.	91,913				1				4	
Erie, Pa.	73,798	32	1		20				10	33
Fort Wayne, Ind.	74,352	12			10		1			1
Fort Worth, Tex.	99,528	16	1							2
Harrisburg, Pa.	70,754		2		4					2
Johnstown, Pa.	66,585		1		3		1		2	1
Kansas City, Kans.	96,854		1		1		2		4	
Lancaster, Pa.	50,269		3		27				1	
Lawrence, Mass.	98,197	19	2	1	10	1			4	5
Little Rock, Ark.	55,158	24							1	
Malden, Mass.	50,067		2		15				3	
Manchester, N. H.	76,959	27							1	1
Mobile, Ala.	56,536	15	1						1	1
Norfolk, Va.	88,076				4				3	3
Oklahoma, Okla.	88,153	17	1		6		1			
Passaic, N. J.	69,010	20	11				1		2	2
Rockford, Ill.	53,761				2		1		1	1
Sacramento, Cal.	64,806	17							1	1
Saginaw, Mich.	54,815	16	1		4		4	1		
San Diego, Cal.	51,115	20	1		6		2		2	2
Schenectady, N. Y.	95,265	15			17		1		6	1
Sioux City, Iowa.	55,588		1				1			
Somerville, Mass.	85,690	13	1		4				9	3
South Bend, Ind.	67,030	16			1		3		1	1
Springfield, Ill.	59,498	18			6		1			4
Springfield, Ohio.	50,601	10			3				1	
Troy, N. Y.	77,738				4					11
Wichita, Kans.	67,847		1		3				1	1
Wilkes-Barre, Pa.	75,218	13	7		4		1		3	
Wilmington, Del.	93,161	24					1			
York, Pa.	50,513				1					
From 25,000 to 50,000 inhabitants:										
Alameda, Cal.	27,031	3	1							
Brookline, Mass.	31,934	4					2			
Butler, Pa.	26,587	5	1		5		1			
Butte, Mont.	42,918									
Chelsea, Mass.	32,452	12			1		2		8	2
Chillicothe, Mass.	28,688	11			16				1	
Clinton, Iowa.	27,004	3					2		3	
Columbia, S. C.	34,058	16					2			
Cumberland, Md.	25,564	4			3				1	
Danville, Ill.	31,554	10			1				1	1
Davenport, Iowa.	47,127		1		1		2		2	
Dubuque, Iowa.	39,650				5		1		2	2
East Orange, N. J.	41,155	5	1		10		1		2	
Elgin, Ill.	27,844	2								1
Evanston, Ill.	28,312		1		1		1			
Everett, Mass.	38,307		1		3				2	
Everett, Wash.	33,767				15	1				
Galveston, Tex.	41,076	15							3	2
Haverhill, Mass.	47,774		5				2		4	
Kalamazoo, Mich.	47,364	17			5					
Kenosha, Wis.	30,319	5	2	1	23				1	
La Crosse, Wis.	31,522		3				1			
Lexington, Ky.	39,703	11	1				2			1
Lincoln, Nebr.	46,028	7			2		1			
Lorain, Ohio.	35,662				3		2			
Lynchburg, Va.	32,385	6	1		2				1	
Madison, Wis.	30,081									

Population Apr. 15, 1910; no estimate made.

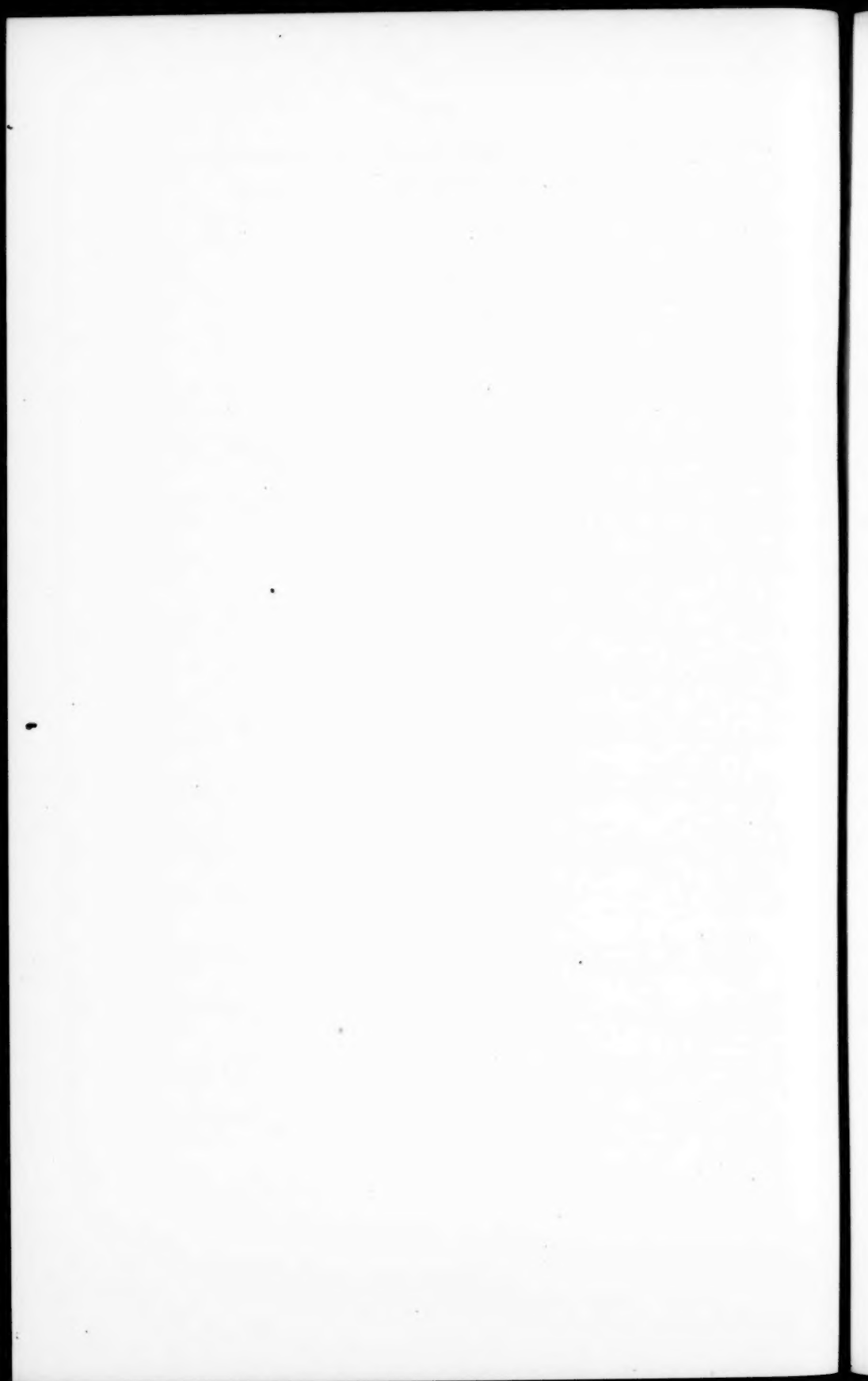
## DIPHTHERIA, MEASLES, SCARLET FEVER, AND TUBERCULOSIS—Contd.

## City Reports for Week Ended July 8, 1916—Continued.

City.	Population as of July 1, 1915. (Es- timated by United States Census Bureau.)	Total deaths from all causes.	Diph- theria.		Measles.		Scarlet fever.		Tubercu- losis.		
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	
From 25,000 to 50,000 inhabit- ants—Continued.											
Medford, Mass.	25,737	8									1
Montclair, N. J.	25,550	2			1					2	1
New Castle, Pa.	40,351				2						
Newport, Ky.	31,722	7	1				1				
Newport, R. I.	29,631	6	1								
Newton, Mass.	43,085	10	1		14					1	
Niagara Falls, N. Y.	36,240	12			15					2	2
Norristown, Pa.	30,833	12			1						1
Ogden, Utah.	30,466	8			3		8				
Orange, N. J.	32,524	12	4		7		1			1	
Oshkosh, Wis.	35,581				15		1			3	3
Pasadena, Cal.	43,859	6			1		1			1	1
Perth Amboy, N. J.	39,725				1		1			3	
Pittsfield, Mass.	37,580	4			1		1			3	1
Portsmouth, Va.	38,610	14			1						1
Quincy, Ill.	36,764	17									
Racine, Wis.	45,507				2						
Roanoke, Va.	41,929	15			12						1
Rock Island, Ill.	27,961	4			3		2				
San Jose, Cal.	37,994	15	2				1			1	2
Steubenville, Ohio.	26,631	9	1							1	
Stockton, Cal.	34,508	12									3
Superior, Wis.	45,285	11	3				1				
Taunton, Mass.	35,957	7									1
Topeka, Kans.	47,914	12			2		1			1	1
Waltham, Mass.	30,129	6			2					1	2
West Hoboken, N. J.	41,893	9	1		3		2			2	
Wheeling, W. Va.	43,097	13			3						
Williamsport, Pa.	33,495						1			1	
Wilmington, N. C.	28,264	10									1
Winston-Salem, N. C.	30,094	9	1		19		1			1	
Zanesville, Ohio.	30,406	10								2	
From 10,000 to 25,000 inhabitants:											
Ann Arbor, Mich.	14,979	12									1
Beaver Falls, Pa.	13,316						1				
Braddock, Pa.	21,310	5									
Cairo, Ill.	15,593	10			1						4
Coffeyville, Kans.	16,765									1	
Concord, N. H.	22,480	8			9						
Galesburg, Ill.	23,023	3			15						
Kearny, N. J.	22,753		1		11						2
Kokomo, Ind.	20,312	9					1			1	1
Long Branch, N. J.	15,057		2								
Marinette, Wis.	14,610				15						
Melrose, Mass.	17,166	2								1	
Morristown, N. J.	13,158	6	1		14						
Nanticoke, Pa.	22,441	2									
Newburyport, Mass.	15,195	2									1
New London, Conn.	20,771	11	1		8						
North Adams, Mass.	12,019	3			7		1				
Northampton, Mass.	19,816	6			21						2
Phoenix, Ariz.	17,768	9									2
Plainfield, N. J.	23,280	6	2		1		1				
Rutland, Vt.	14,624	1			5		5				
Sandusky, Ohio.	20,160				19						
Saratoga Springs, N. Y.	12,842									1	1
Steelton, Pa.	15,337	7									
Wilkinsburg, Pa.	22,361	9									

<sup>1</sup> Population Apr. 15, 1910; no estimate made.





## FOREIGN.

### CHOLERA ON VESSEL.

#### Steamship "Hong-Kheng" at Colombo, Ceylon.

The steamship *Hong-Kheng* arrived May 9, 1916, at Colombo, Ceylon, from Haifong, Indo-China, with 3 cases of cholera on board and a history of 17 cases during the voyage. The *Hong-Kheng* left Haifong April 27, 1916, with 2,653 passengers from the Province of Anam, Indo-China. The vessel had a physician on board but carried no disinfecting apparatus. During the stay of the *Hong-Kheng* at Colombo 38 cases of cholera were landed from the vessel and 6 deaths from cholera occurred on board. All contacts were isolated on shore and from May 17 to the date of departure of the vessel, June 1, 1916, 23 cases of cholera occurred in this group. The vessel was thoroughly disinfected and the water was changed. The *Hong-Kheng* arrived at Suez June 15 without further history of cholera on board and was allowed transit through the canal en route to Marseille.

### CHINA.

#### Examination of Rats—Shanghai.

During the week ended June 17, 1916, 343 rats were examined at Shanghai. No plague infection was found.

The last plague-infected rat found at Shanghai was found during the week ended May 6, 1916.

### CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER.

#### Reports Received During Week Ended July 28, 1916.<sup>1</sup>

##### CHOLERA.

Place.	Date.	Cases.	Deaths.	Remarks.
Ceylon:				
Colombo.....	May 9-June 1.....	61	37	From s. s. Hong-Kheng from Haifong, Indo China.
Java:				
Batavia.....	May 4-17.....	35	25	
Malang and Djombang.....	Apr. 28-May 5....	2	2	
Samarang.....	Apr. 22-28.....	2	2	
Philippine Islands:				
Manila.....	May 28-June 3....	11	2	
At sea:				
Steamship Hong-Kheng....	Apr. 27-May 9....	17	14	En route from Haifong, Indo-China, to Colombo.

<sup>1</sup> From medical officers of the Public Health Service, American consuls, and other sources.

# **CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—** Continued.

**Reports Received During Week Ended July 28, 1916—Continued.**

## **PLAGUE.**

Place.	Date.	Cases.	Deaths.	Remarks.
<b>Egypt:</b>				
Alexandria.....	June 14.....		1	
Port Said.....	June 9.....	1	1	
Provinces—				
Beni-Souef.....	June 10-14.....	9	3	
Fayoum.....	June 10-13.....	14	5	
Galioubeh.....	June 9.....	2		
Menoufieh.....	June 12.....	1	1	
Minieh.....	June 10-15.....	17	4	
<b>Java:</b>				
Residencies—				
Kediri.....	Apr. 22-May 5.....	3	3	
Paseroean.....	do.....	3	3	
Surabaya.....	do.....	5	4	Surabaya city and district, 3 cases, 3 deaths.
Surakarta.....	do.....	4	8	
<b>Persia:</b>				
Recht.....	May 2-19.....	20	14	
<b>Union of South Africa:</b>				
Orange Free State.....	Jan. 23-Mar. 26.....	36	23	Remaining under treatment Mar. 26, 1916: 6 cases.

## **SMALLPOX.**

<b>Australia:</b>				
New South Wales—				
Narrabri.....	May 26-June 7.....	8		
<b>Austria-Hungary:</b>				
Hungary—				
Budapest.....	June 11-17.....	8	2	
<b>Canada:</b>				
Ontario—				
Fort William and Port Arthur.....	July 9-15.....	1		
<b>Egypt:</b>				
Alexandria.....	June 4-10.....	2	1	
Cairo.....	Feb. 5-11.....	1	1	
<b>Germany:</b>				
Hamburg.....	June 11-17.....	1		
<b>Java:</b>				
Batavia.....	May 4-17.....	3	1	Mid-Java, Apr. 28-May 5, 1916: Cases, 48; deaths, 6; West Java, May 4-17, 1916: Cases, 43; deaths, 13.
<b>Mexico:</b>				
Vera Cruz.....	July 3-9.....		1	
<b>Porto Rico:</b>				
Bayamon.....	July 3-16.....	1		
San Juan.....	do.....	3		
<b>Portugal:</b>				
Lisbon.....	June 18-24.....	2		
<b>Russia:</b>				
Petrograd.....	May 6-19.....	51	11	
<b>At sea:</b>				
Steamship Katuna.....				Case of smallpox landed at Colombo, Ceylon, May 12, 1916. Vessel arrived May 27 at Fremantle, Australia, was ordered into quarantine, and proceeded to Melbourne direct for disinfection.

## **TYPHUS FEVER.**

<b>Austria-Hungary:</b>				
Hungary—				
Budapest.....	June 11-17.....		2	
<b>Egypt:</b>				
Alexandria.....	June 4-10.....	53	14	
Cairo.....	Feb. 5-11.....	15	13	
<b>Java:</b>				
Batavia.....	May 11-17.....		1	Apr. 21-May 10, 1916: Cases, 17; deaths, 6.
Samarang.....	Apr. 22-24.....	2	1	
Surabaya.....	Apr. 24-May 5.....	2	2	

# **CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—** Continued.

## **Reports Received During Week Ended July 28, 1916—Continued.**

### **TYPHUS FEVER—Continued.**

Place.	Date.	Cases.	Deaths.	Remarks.
Mexico:				
Vera Cruz.....	July 3-9.....		1	
Russia:				
Petrograd.....	May 6-19.....	7	3	
Turkey in Asia:				
Jaffa.....	Mar. 19-25.....			Present.

### **YELLOW FEVER.**

Place.	Date.	Cases.	Deaths.	Remarks.
Mexico:				
Merida.....	July 19.....	3		

## **Reports Received from July 1 to 21, 1916.<sup>1</sup>**

### **CHOLERA.**

Place.	Date.	Cases.	Deaths.	Remarks.
Austria-Hungary.....				Mar. 12-May 6, 1916: Cases, 425; deaths, 155.
Austria.....	Mar. 26-Apr. 8.....	2		
Bosnia-Herzegovina.....	Mar. 12-Apr. 29.....	397	147	
Hungary.....	Mar. 20-Apr. 2.....	2		
Ceylon:				
Colombo.....	May 7-20.....	43	5	
Egypt:				
Suez.....	May 18-20.....	5	2	
Tor, quarantine station.....	May 22-June 3.....	112	42	
India:				
Bassein.....	Apr. 23-29.....		1	
Bombay.....	May 14-June 3.....	6	3	
Calcutta.....	May 7-27.....		92	
Henzada.....	Apr. 23-May 20.....		4	
Rangoon.....	May 21-27.....	1	1	
Indo-China.....				Dec. 1-31, 1915: Cases, 510; deaths, 395. Jan. 1-Feb. 29, 1916: Cases, 1,332; deaths, 762.
Provinces—				
Anam.....	Dec. 1-31.....	403	388	
Do.....	Jan. 1-Feb. 29.....	1,295	738	
Cambodia.....	.....do.....	11	10	
Cochin China.....	.....do.....	6	1	
Tonkin.....	Dec. 1-31.....	17	7	
Do.....	Jan. 1-Feb. 29.....	20	13	
Saigon.....	May 1-21.....	39	3	
Java.....				East Java, Apr. 8-14, 1916: Cases, 2; deaths, 2. West Java, Apr. 13-26, 1916: Cases, 45; deaths, 40.
Batavia.....	Apr. 13-26.....		40	
Malang.....	Apr. 8-14.....	2	2	
Persia:				
Foumen.....	May 9.....	3	2	Previously erroneously included in cases at Reht.
Philippine Islands:				
Manila.....	May 14-20.....	9	11	Not previously reported: Cases, 3; deaths, 1.
Provinces.....				May 1-27, 1916: Cases, 12; deaths, 10.
Laguna.....	May 21-June 10.....	14	7	
Lanae.....	May 28-June 3.....	110	88	
Mindoro.....	May 21-27.....	7	7	
Rizal.....	May 21-June 10.....	6	5	
Siam:				
Bangkok.....	May 15-27.....	4	4	
Turkey:				
Constantinople.....	June 14.....			Present among soldiers.
Smyrna.....	To June 14.....			Epidemic. Estimated number cases daily 50.

<sup>1</sup> For reports received from Jan. 1 to June 30, 1916, see Public Health Reports for June 30, 1916. The tables of epidemic diseases are terminated semiannually and new tables begun.

# **CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—** Continued.

## **Reports Received from July 1 to 21, 1916—Continued.**

### **CHOLERA—Continued.**

Place.	Date.	Cases.	Deaths.	Remarks.
At sea:				
Steamship Pei-ho.....	Apr. 19-30.....	1	1	From Saigon, Indo-China, for Marseille.
Do.....	May 5-17.....	8	8	From Colombo for Suez.

### **PLAGUE.**

Ceylon:				
Colombo.....	Apr. 30-May 6....	3	3	
Chile:				
Mejillones.....	May 28-June 3....	1	1	
Antofagasta.....	June 4-10.....	1	1	
Egypt:				Jan. 1-June 8, 1916: Cases, 1,520; deaths, 747.
Alexandria.....	May 26-June 8....	18	12	
Port Said.....	May 28-June 2....	2	2	
Provinces—				
Assiout.....	May 27-June 8....	8	7	
Beni-Souef.....	May 26-June 7....	18	8	
Fayoum.....	May 26-June 8....	81	34	
Girgeh.....	June 7.....	1	1	
Minieh.....	May 29-June 6....	10	6	
Ecuador:				
Ambato.....	May 1-31.....			Epidemic.
Bahia.....	do.....			Country district, vicinity of Bahia.
Guayaquil.....	do.....	3	2	
Manta.....	do.....			Country district, vicinity of Manta.
India.....				May 7-13, 1916: Cases, 1,502; deaths, 1,138.
Bassein.....	Apr. 23-May 29....		105	
Bombay.....	May 14-June 3....	204	185	
Calcutta.....	May 7-27.....		5	
Henzada.....	Apr. 23-May 29....		6	
Karachi.....	May 14-27.....	47	41	
Madras Presidency.....	May 14-June 3....	64	43	
Mandalay.....	do.....		1	
Moulmein.....	Apr. 23-May 29....		28	
Prome.....	do.....		1	
Rangoon.....	Apr. 23-May 27....	157	146	
Indo-China.....				Dec. 1-31, 1915: Cases, 90; deaths, 70. Jan. 1-Feb. 29, 1916: Cases, 205; deaths, 153.
Provinces—				
Anam.....	Dec. 1-31.....	36	20	
Do.....	Jan. 1-Feb. 29....	79	62	
Cambodia.....	Dec. 1-31.....	27	36	
Do.....	Jan. 1-Feb. 29....	77	71	
Cochin China.....	Dec. 1-31.....	4	1	
Do.....	Jan. 1-Feb. 29....	49	20	
Tonkin.....	Dec. 1-31.....	23	23	
Saigon.....	May 15-21.....	8	4	
Java.....				East Java, Apr. 9-15, 1916: Cases 33; deaths, 32.
Residencies—				
Kediri.....	Apr. 9-21.....	7	7	
Paseroean.....	do.....	3	2	
Surabaya.....	do.....	13	12	Surabaya city, and district.
Surakarta.....	do.....	10	11	
Mauritius.....	Apr. 15.....	1	1	
Siam:				
Bangkok.....	Apr. 30-May 30....	32	28	
Straits Settlements:				
Singapore.....	Apr. 30-May 20....	3	1	

### **SMALLPOX.**

Austria-Hungary:				
Austria.....				Feb. 13-19, 1916: Cases, 1,536.
Vienna.....	May 27-June 10....	3	1	
Hungary:				
Budapest.....	May 21-June 10....	22	12	
Brazil:				
Rio de Janeiro.....	Apr. 9-May 13.....	42	8	
Santos.....	May 8-14.....		1	

# **CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—** Continued.

## **Reports Received from July 1 to 21, 1916—Continued.**

### **SMALLPOX—Continued.**

Place.	Date.	Cases.	Deaths.	Remarks.
Canada:				
Ontario—				
Niagara Falls.....	July 2-8.....	1		
Toronto.....	June 25-July 1....	2		
Ceylon:				
Colombo.....	May 7-20.....	2		
China:				
Antung.....	May 22-28.....	2		
Dairen.....	May 21-27.....	1		
Chungking.....	May 7-13.....			Present.
Foochow.....	May 7-27.....			Do.
Harbin.....	May 2-8.....	2		
Hongkong.....	May 7-27.....	41	29	
Tientsin.....	May 14-20.....	23	4	
East Africa:				
Mombasa.....	Apr. 24-30.....	3	1	
Egypt:				
Alexandria.....	May 28-June 3....	1		
Cairo.....	Jan. 22-Feb. 4....	5		
France:				
Paris.....	May 14-27.....	5		
Germany:				
Breslau.....	May 21-27.....	1		
Great Britain:				
Cardiff.....	June 4-17.....	1	1	
London.....	...do.....	1		
India:				
Bassein.....	May 7-13.....		2	
Bombay.....	May 14-27.....	96	39	
Calcutta.....	May 7-27.....		2	
Madras.....	May 14-June 3....	66	19	
Rangoon.....	Apr. 23-May 27....	128	39	
Indo-China:				
Provinces—				Dec. 1-31, 1915: Cases, 74; deaths
Anam.....	Dec. 1-31.....	48		14. Jan. 1-Feb. 29, 1916: Cases,
Do.....	Jan. 1-Feb. 29....	24		134; deaths, 16.
Cambodia.....	Dec. 1-31.....	19	13	
Do.....	Jan. 1-Feb. 29....	37	14	
Cochin China.....	Dec. 1-31.....	1	1	
Do.....	Feb. 1-29.....	10		
Tonkin.....	Dec. 1-31.....	6		
Do.....	Jan. 1-Feb. 29....	63	2	
Japan:				
Kobe.....	May 29-June 11...	21	3	
Java:				
Batavia.....	Apr. 13-26.....	4	3	East Java, Apr. 8-14: Cases, 7;
Sittoebondo.....	Apr. 8-14.....	1	1	deaths, 7. Mid-Java, Apr. 1-14,
Toeban and Bosjonegoro.....	...do.....	6	6	1915: Cases, 40; deaths, 4.
				West Java, Apr. 13-19, 1916:
				Cases, 48; deaths, 10.
Mexico:				
Aguascalientes.....	June 12-25.....		21	
Frontera.....	May 28-June 10...	4	1	
Guadalajara.....	June 11-17.....	35	9	
Mazatlan.....	May 31-June 6....		4	
Tenosique.....	June 14.....			175 miles south of Frontera. Epi-
Vera Cruz.....	June 4-July 2....	5	9	demic among troops.
Netherlands:				
Amsterdam.....	May 28-June 3....	1		
Philippine Islands:				
Manila.....	...do.....	1		
Porto Rico:				
Agua Buenas.....	June 19-25.....	5		June 19-25, 1916: Cases, 33.
Arecibo.....	...do.....	2		
Bayamon.....	June 19-July 2....	2		
Naranjito.....	June 26-July 2....	4		
Rio Piedras.....	...do.....	1		
San Juan.....	...do.....	24		
Toa Alta.....	...do.....	12		
Portugal:				
Lisbon.....	May 21-June 10...	8		
Russia:				
Moscow.....	Apr. 30-May 23....	132	32	
Riga.....	Apr. 6-12.....	1		
Petrograd.....	Apr. 23-May 6....	62	10	
Siam:				
Bangkok.....	May 24-29.....	2		



**CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—**  
Continued.**Reports Received from July 1 to 21, 1916—Continued.****SMALLPOX—Continued.**

Place.	Date.	Cases.	Deaths.	Remarks.
Spain:				
Madrid.....	May 1-31.....		13	
Valencia.....	May 21-June 3.....	10	3	
Straits Settlements:				
Singapore.....	Apr. 30-May 6.....	2	1	
Switzerland:				
Basel.....	May 13-June 3.....	14		

**TYPHUS FEVER.**

Austria-Hungary:				
Austria.....				Feb. 13-26, 1916: Cases, 845.
Hungary.....				Feb. 21-Mar. 5, 1916: Cases, 35;
Budapest.....	May 21-June 10.....	13		deaths, 7.
China:				
Harbin.....	May 2-8.....	1		
Tientsin.....	May 14-20.....		1	
Egypt:				
Alexandria.....	May 21-June 3.....	86	55	
Cairo.....	Jan. 8-Feb. 4.....	26	8	
Germany:				
Chemnitz.....	May 28-June 3.....		1	
Frankfort-on-Main.....	June 11-17.....		1	
Hanover.....	May 7-13.....	2		
Königsberg.....	June 4-10.....	1		
Leipzig.....	do.....		1	
Greece:				
Saloniki.....	May 1-14.....		6	
Japan:				
Tokyo.....	May 22-June 8.....	65		Jan. 1-June 8, 1916: Cases, 417.
Java:				East Java, Apr. 8-14, 1916: Cases,
Batavia.....	Apr. 13-26.....	32	9	2; deaths, 2. Mid-Java, Apr.
Samarang.....	Apr. 1-22.....	6	3	1-22, 1916: Cases, 25; deaths,
Surabaya.....	Apr. 8-14.....	2	2	5. West Java, Apr. 13-26,
				1916: Cases 43; deaths, 11.
Mexico:				
Aguascalientes.....	June 12-25.....		26	
Guadalajara.....	June 11-17.....	4	1	
Vera Cruz.....	June 4-11.....		1	
Russia:				
Moscow.....	Apr. 30-May 20.....	538	24	
Petrograd.....	Apr. 23-May 6.....	11	2	
Switzerland:				
Geneva.....	May 21-27.....	1		
Turkey in Asia:				
Adana.....	May 13.....			Present.
Haifa.....	Apr. 24-30.....	5	1	
Jaffa.....	Apr. 23-29.....			Do.
Mersina.....	May 7-13.....	5		
Tarsus.....	May 13.....			Do.

**YELLOW FEVER.**

Ecuador:				
Guayaquil.....	May 1-31.....	21	17	

# SANITARY LEGISLATION.

## COURT DECISIONS.

### CONNECTICUT SUPREME COURT OF ERRORS.

#### **Water Supplies—Protection of—An Injunction Granted Against a Pleasure Resort on a Reservoir—Damages Awarded to the Proprietor of the Resort.**

ROCKVILLE WATER & AQUEDUCT CO. v. KOELSCH et al. (Mar. 15, 1916.)

Under the laws of Connecticut an injunction may be granted prohibiting the maintenance of a pleasure resort where it is liable to cause pollution of a reservoir used for supplying water, but the proprietor of such resort is entitled to damages even when he had notice before the resort was established.

[96 Atlantic Reporter, 947.]

Suit for injunction to restrain the defendants from operating a public pleasure resort, brought to and tried before the superior court for Tolland County, Webb, J., and judgment rendered for an injunction and also that the defendants recover damages under a counterclaim. The plaintiff appeals from the judgment awarding damages to the defendants. No error.

The plaintiff is a corporation empowered by its charter to furnish water for drinking and household purposes to the inhabitants of the city of Rockville and the town of Vernon, and has for many years drawn its water supply from the so-called Snipsic Lake. It also owns the right and privilege of maintaining a dam at the outlet to Snipsic Lake at its present height and thereby flowing lands of one Doyle from whom the defendant Koelsch purchased a tract of land on the eastern shore of the lake comprising about half an acre and bounded westerly by Snipsic Lake. Koelsch bought this land in 1908, many years after the plaintiff's reservoir had been established at its present level, and built a cottage thereon, which he generally occupied with his family during a portion of the summer season of each year. At that time there existed on the western shore of the lake an extensive public pleasure resort and picnic ground called "Thompson's Grove," which the plaintiff bought and suppressed in 1909, giving notice at the time, through a newspaper published in Rockville, that it would institute proceedings for the removal of any buildings on its watershed which should be found objectionable. In 1912, the plaintiff company, being informed that the defendants were contemplating the establishment upon the premises bought from Doyle of a public pleasure resort similar in character to Thompson's Grove, gave personal notice to the defendants that no enterprise of that character would be permitted within the plaintiff's flowage area or watershed, to which notice the defendant Koelsch replied that when he got ready he would build. In May, 1913, the defendants established a general public pleasure resort equipped with devices to attract the general public, including a dance pavilion, music and refreshment rooms, boating facilities, shooting gallery, and other kindred attractions, and, after extensive advertising, opened the same to the public on May 30, and operated it for three days. As many as 350 people were, at certain times, in attendance. On June 2 the plaintiff obtained a temporary

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injunction restraining the defendants from maintaining their public pleasure resort. No actual pollution of the waters of the reservoir by reason of the maintenance of the defendants' pleasure resort has been found; but it is found that, by reason of the location of the premises sloping toward the reservoir, its waters will be liable to be polluted in case the defendants continue to use their premises as a public resort and picnic ground.

Section 5 of chapter 137 of the public acts of 1909 provides that:

Whenever any land or building is so used, occupied, or suffered to remain that it is a source of pollution to the water stored in the reservoir used for supplying the residents of a city, town, or borough with water or ice, or to any source of supply to such reservoir, or when such water or ice is liable to pollution in consequence of the use of the same, either the authorities of such town, city, or borough, or the county or town health officer, or the person, firm, or corporation having charge of such reservoir, or the right to procure ice therefrom, may apply for relief to the superior court of the county where such reservoir or watershed is located, and said court may make any order in the premises, temporary or permanent, which in its judgment may be necessary to preserve the purity of such water or ice.

And section 6 provides that:

When any order is made by the superior court for the abatement of any nuisance to such water or ice and said court shall find that compliance with such order will damage any person or corporation or deprive him or it of any substantial right, said court may assess just damages in favor of such person or corporation, to be paid by such municipality, person, or corporation, as the court may decree.

Pursuant to this act, the defendants in their answer alleged by way of counterclaim that compliance with the terms of the injunction prayed for would damage them and deprive them of a substantial right, and demanded damages pursuant to the statute. The superior court has assessed the sum of \$1,800 as just damages in favor of the defendants, and has annexed to the judgment permanently enjoining the defendants from using their premises as a public pleasure resort or picnic ground, a direction that the plaintiff company pay said sum to the defendants.

BEACH, J. (after stating the facts as above): Broadly speaking, the plaintiff's claim is that it is entitled to the injunction prayed for without paying damages. It is said that at the common law damages are not allowable for the abatement of a nuisance, and, further, that under the act of 1909 the defendants are not entitled to damages, because any pecuniary damage which they may have suffered in consequence of proceeding with the establishment of this nuisance after general and personal notice of the plaintiff's intention to enjoin its maintenance are not "just damages" within the meaning of the statute, especially in view of the public obligations of the plaintiff corporation. It is also said that the plaintiff has a property right in the waters in the reservoir and in having them kept free from pollution, and that this property right is invaded by the acts of the defendants; that the defendants have no riparian proprietorship or other right in the land covered by the waters and reservoir; and that the injunction is a proper exercise of the police power of the State.

We take up first the plaintiff's claim that the defendants' pleasure resort was a common-law nuisance, for the abatement of which no damages are recoverable.

There was no evidence of any actual contamination of the water, and therefore no finding of nuisance. It is, however, found that the waters of the reservoir will be liable to become polluted by a continued use of the defendants' premises as a public pleasure resort; and this is claimed to be a sufficient basis for the conclusion that such use ought to be enjoined without compensation. It may be doubted whether the finding of liability to pollution establishes the existence of such a real and immediate danger as would, in the absence of statute, be required to justify an injunction against a threatened nuisance. (*Missouri v. Illinois & Chicago District*, 180 U. S., 208, 248, 21 Sup. Ct., 331, 45 L. Ed., 497.)

Passing that point, it must be conceded that a public pleasure resort and picnic ground is not necessarily a common-law nuisance. It may become one, if improperly conducted; but there is no allegation or finding that the defendants' resort was im-

properly conducted. The sole basis for the claim that the defendants' resort was abatable as a nuisance is found in its proximity to the waters of Snipsic Lake. So that the true scope and effect of the plaintiff's claim of law is that any kind of a menace to the purity of the waters of its reservoir becomes by virtue of the danger to the public health a nuisance, which it has a right to have abated, without the payment of damages.

We think this claim is too broad, and that section 6 of the act of 1909 was intended to provide for the assessment of damages in cases like this, where the thing complained of as a nuisance or as dangerous to the public health would be unobjectionable except for its proximity to a source of water supply.

The history of this legislation shows that the general assembly, while giving full protection to sources of water supply, has always made some provision for possible compensation to the injured landowner, and has never acceded to the plaintiff's broad claim that danger to the public health was of itself a sufficient ground for an injunction without compensation.

\* \* \* \* \*

The next question is whether the damages awarded in this case are "just damages," and the plaintiff's claim on that point is that the defendants have no right to compensation because they went into the business after full notice and with the knowledge that the plaintiff would seek an injunction. It is pointed out that one who avails himself of the proximity of the water supply to establish a new business which would be impossible except for such proximity, and after notice that it will create a nuisance, stands in a very different equitable position from one who has long carried on a lawful business which afterwards, in the light of better knowledge of sanitation, comes to be regarded as dangerous to the public health. That is quite true, and it must doubtless have had its effect on the amount of damages awarded in this case. On the other hand, it can not be so that the plaintiff by maintaining a public water supply, and by very properly giving notice of its intention to protect it, can acquire any legal rights in adjoining lands. If these defendants have been lawfully deprived of the right of carrying on a public pleasure resort and picnic ground on their land, it must be because their property has been pro tanto taken for a public use, and for that taking they are entitled to just compensation under the statute. The plaintiff's property right in having its water supply kept free from pollution is merely an incident of the public use to which its property is dedicated, and must be exercised in accordance with the Constitution and the statutes. We are not called upon to determine whether the State might in the exercise of its police power have forbidden the defendants to make any use of the reservoir for boating, for it has not attempted to do so. The question whether the defendants are riparian owners affects only the amount of their just damages, and it is not assigned as error that the damages awarded are excessive, or assessed upon a wrong theory, if assessable at all.

There is no error. In this opinion the other judges concurred.

## STATE LAWS AND REGULATIONS PERTAINING TO PUBLIC HEALTH.

### WASHINGTON.

#### Poliomyelitis—Quarantine—Hospitalization. (Reg. Bd. of H., July 10, 1916.)

Paragraph 12<sup>1</sup> of section 6 of the regulations of the State board of health relating to the control of communicable diseases has been changed to read as follows:

12. *Infantile paralysis or anterior poliomyelitis.*—(a) All cases of anterior poliomyelitis or infantile paralysis shall be handled according to the rules governing cases subject to quarantine.

(b) The patient shall be subject to quarantine for not less than eight weeks from the beginning of the illness.

(c) All persons exposed shall be subject to quarantine for at least 10 days from date of last exposure.

(d) When in the opinion of the health officer it may be advisable, he may order any case of anterior poliomyelitis or infantile paralysis removed to an isolation hospital.

### VIRGINIA.

#### Communicable Diseases—Notification of Cases—Quarantine—Placarding—Disinfection—School Attendance—Burial. (Reg. Bd. of H., May 5, 1916.)

1. *Physician's report of communicable diseases.*—To carry out the provisions of section 2 of an act of assembly, entitled "An act to require the reporting of cases of infectious, contagious, communicable, and dangerous diseases to boards of health (Acts of Assembly, 1910, chap. 307, p. 468), every physician, subject to the penalties of the aforesaid act shall report immediately to the health officer having jurisdiction any cases of the following diseases occurring in his practice, namely, smallpox, Asiatic cholera, bubonic plague, diphtheria, scarlet fever, typhoid fever, cerebrospinal meningitis, typhus fever, and yellow fever, which diseases are hereby denominated as reportable diseases, class 1.

2. To carry out the further provisions of the above act, every physician, subject to the same penalties, shall report once each month to the health officer having jurisdiction any cases of the following diseases occurring in his practice, namely, measles, chicken-pox, tuberculosis, hookworm disease, pellagra, infantile paralysis, rabies, leprosy, and trachoma, which diseases are hereby denominated as reportable diseases, class 2.

3. When any physician finds any disease of class 2 unduly or abnormally prevalent in his practice, he shall report the same immediately to the State board of health

\* \* \* \* \*

#### SMALLPOX.

7. *Diagnosis.*—As soon as the health officer having jurisdiction shall receive report, as required by the above-cited act of assembly, of any case known or suspected to be smallpox or any other dangerous infectious disease, he shall satisfy himself that the necessary precautions are taken to prevent the spread of the disease. If the diag-

<sup>1</sup> Reprint No. 200 from the Public Health Reports, p. 216.



nosis is doubtful, he shall call on the other medical members of the local board of health for their opinion, and the opinion of the majority shall prevail as to the diagnosis. If the said members can not make a definite diagnosis, they shall call on the State board of health, the opinion of whose representative shall be final. Pending a definite diagnosis, a suspicious case should be strictly isolated.

8. *Quarantine.*—Immediately upon establishing a diagnosis of smallpox, every patient and the premises of every patient shall be strictly quarantined. All persons living in the same house shall be quarantined, unless they exhibit scars of successful vaccination recent enough to be protective, in the opinion of the health officer in charge. Those protected by vaccination shall be allowed to leave the premises after fumigation of their effects, but may not return until the quarantine is raised. Unvaccinated persons resident in the house shall be vaccinated and quarantined for 14 days. Any departure from this rule must be with the consent of the State board of health.

9. During the quarantine no person shall visit the premises except the health officer or other persons duly authorized so to do by the health officer. No goods, clothing, or any material whatever, may be taken from the premises, unless authorized by the health officer and under such conditions as he may prescribe.

10. Quarantine for smallpox shall be raised by the health officer only when in his opinion all danger of infection from the cases is passed and after thorough disinfection of the premises and of all exposed material thereupon.

11. *Compulsory vaccination.*—Persons not living on the premises who have been intimately exposed to smallpox and who are not, in the opinion of the health officer, protected by previous vaccination shall be quarantined as though they had the disease, but if they submit to vaccination they may be permitted to go at large under such restrictions as the health officer may place upon them for 14 days.

#### PREMISES TO BE PLACARDED FOR ALL INFECTIOUS DISEASES.

12. At the entrance to the premises under quarantine, whether for smallpox or other infectious disease, a notice announcing the existence of the disease and warning all persons against entering shall be posted by the health officer. No one shall displace, deface, remove, or cover up any placard or notice thus posted until the quarantine is raised by the health officer.

#### SCARLET FEVER.

13. *Quarantine and notifications.*—As soon as a diagnosis of scarlet fever is made by the attending physician he shall notify the parent, householder, or other responsible person of the existence of scarlet fever, and quarantine shall begin immediately without further action. The attending physician shall then notify the health officer of the existence and location of the case. The patient shall be placed and shall remain until released (as hereinafter provided) in strict isolation; that is to say, the patient and nurse shall occupy a room or rooms to themselves as far away from the rest of the family as possible. No other persons except the attending physician or the health officer shall enter this room or these rooms during the period of isolation. No article of food, clothing, or of anything that can carry the germs of disease shall be taken from the isolated room or rooms except after being properly disinfected under the direction of the physician or health officer.

14. *Movements of exposed persons.*—During the period of isolation all persons under 15 years of age resident on the premises shall be confined to the premises and may not leave during the period of isolation. Adults, other than those excepted below, may attend their regular vocation, but shall not enter any school, church, Sunday school, public meeting, or other place which children frequent or attend. Adults engaged in any industry connected with the preparation or handling of milk or food,



or with any factory, school, office, shop, store, or other place where persons under 15 years of age are or may be employed or may congregate shall not work at such places during the period of isolation.

15. *Premises to be placarded.*—At the entrance to the premises under quarantine there shall be posted notice announcing the presence of the disease and warning persons not to enter. No person except adults resident on such premises shall be permitted to enter the premises during the period of isolation unless given permission to do so by the health officer.

16. *When quarantine may be raised.*—When the case has recovered and peeling of the skin and all discharges from the throat, nose, and ears have ceased, but not in any case until at least four weeks from the date on which the eruption appeared on the patient, all infected rooms and goods shall be disinfected and the isolation terminated. Disinfection shall be in accordance with the section of these rules governing same.

17. *Isolation of exposed children.*—Children exposed to scarlet fever but who have not developed symptoms of the disease may, in the discretion of the health officer, be isolated elsewhere than on the infected premises. If they do not develop scarlet fever, they may be released by the health officer after seven days.

#### DIPHTHERIA.

18. *Quarantine and notification.*—As soon as a diagnosis of diphtheria is made by the attending physician, he shall notify the parent, householder, or other responsible person of the existence of diphtheria, and quarantine shall begin immediately without further action. The attending physician shall then notify the health officer of the existence and location of the case. Cases of diphtheria shall be isolated in exactly the same manner as those of scarlet fever, and rules 13, 14, and 15, as hereinbefore laid down, shall apply.

19. *When quarantine may be raised.*—The quarantine for diphtheria shall not be raised, nor shall any children under 15 years of age, including the patient, be allowed to leave the premises until a negative culture from the nose and throat of the child shall have been secured, but in no case until two weeks shall have elapsed from the date of the appearance of the first symptom. If a culture be not taken with a view of determining whether the organism has disappeared, quarantine, as herein prescribed for the patient and other persons on the premises under 15 years of age, shall not be raised for three weeks from the appearance of the first symptom.

20. *Isolation of exposed children.*—Children who have been exposed to diphtheria but who have not developed symptoms of the disease and who have negative cultures from the nose and throat may, in the discretion of the health officer in charge, be isolated elsewhere than on the infected premises, and if they show no sign of diphtheria at the expiration of seven days may be then released from isolation.

#### MEASLES.

21. *Quarantine and notification.*—As soon as a diagnosis of measles is made by the attending physician, he shall notify the parent, householder, or other responsible person of the existence of measles, and quarantine shall begin immediately without further action. The attending physician shall then notify the health officer of the existence and location of the case. Cases of measles shall not be allowed to leave the premises where they are isolated until all active symptoms have ceased and in no case until 12 days after the appearance of the eruption. No child who has not had the measles and who has been exposed to that disease shall be allowed to go to any school, church, or Sunday school, or other public place, or to play with other children, until 14 days have elapsed after such exposure. Isolation in measles shall include confinement to the infected premises and exclusion from such premises of all persons who have not had measles.

## WHOOPIING COUGH.

22. *Movements of infected and exposed persons.*—Cases of whooping cough shall not come or be brought closer than within 30 feet of any person who has not had the disease. They shall wear on the left arm a band of green cloth. These rules shall apply for six weeks after the child begins to whoop, provided the paroxysmal cough has ceased by the expiration of that time. Persons who have not had whooping cough and who have been exposed to it shall remain under the same restrictions as active cases for a period of 14 days.

## SCHOOL REGULATIONS.

23. *Children excluded from school.*—Children affected with, or suspected of being, affected with, any of the following diseases shall not be admitted to school: Chicken-pox, diphtheria, impetigo contagiosa, measles, mumps, pediculosis, ringworm, scabies, scarlet fever, smallpox, tuberculosis, trachoma, and whooping cough.

24. *Duty of teachers and school nurses.*—When a teacher or school nurse suspects a child of having one of the above diseases, he or she shall at once notify the family and the health officer having jurisdiction. The latter shall see that the family has the child examined by a physician and a diagnosis established.

25. *Exclusion because of diseases at home.*—Children shall not be admitted to school from homes in which there are cases of any of the following diseases: Whooping cough (unless the child has had the disease), measles (unless the child has had the disease or until seven days after known exposure), diphtheria, scarlet fever, and smallpox.

26. *Readmission of excluded children.*—Children who have been excluded from school for communicable diseases shall not be readmitted except upon the following conditions:

Chicken-pox.—Not until scaling is complete.

Diphtheria.—Not until bacteriological examination shows the absence of infection from nose and throat (three weeks).

Mumps.—Not until after the disappearance of swelling.

Scabies (itch).

Impetigo.

Pediculosis (lice).

Ringworm.

} Not until cure is complete.

Scarlet fever.—Not until four weeks shall have elapsed and until scaling is complete and discharges from throat, nose, and ears have ceased.

Trachoma.—Not until cure is complete.

Whooping cough.—Not until six weeks after the patient begins to whoop, provided the paroxysmal cough has ceased by that time.

Tuberculosis.—Not until sputum is free from tubercle bacilli and patient is apparently cured.

27. Persons excluded on account of any of these diseases shall present a certificate from the health officer stating that all danger from the disease is over before they shall be permitted to return to school.

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## DISINFECTION AND DISINFECTANTS.

49. *General rules.*—In disinfecting premises following death, recovery or removal of a patient affected with an infectious disease, the health officer in charge of disinfection shall not depend solely upon fumigation for cleansing the premises, as a gaseous disinfectant, even when the room is tightly sealed, often kills only the germs upon the surface and does not penetrate deeply.

50. *Scrubbing, boiling, etc.*—Scrubbing with soap and water, wiping all floors and woodwork with a disinfectant solution, boiling all material that may properly be boiled and sunning and airing all bedding which can not be boiled shall be included in disinfection.

51. *Fumigation.*—Fumigation shall consist in liberating formaldehyde or sulphur dioxide gas in a room tightly sealed with gummed paper or with cotton batting and so remaining for at least six hours.

52. In fumigating with sulphur, 3 pounds of sulphur must be used for every 1,000 cubic feet of room space. The room so fumigated must remain closed for 24 hours.

53. *Strength of liquid disinfectants.*—Any liquid disinfectant to be approved by the State board of health shall have a carbolic acid coefficient of not less than two as determined by the standard of the United States Hygienic Laboratory.

54. *Standard solutions.*—For strong solutions used in disinfecting stools and badly infected vessels, fabrics, etc., the following should be used:

I.		Parts.
Bichloride of mercury.....		1
Water (slightly salt).....		500

II.		
Alcohol.....		50
Carbolic acid.....		50
Mix and add fresh water.....		900

III.

Any proprietary disinfectant which (1) has a carbolic coefficient of two or more, as determined by the standard of the United States Hygienic Laboratory and which (2) is used as directed on the container.

55. *Weaker approved solutions.*—For ordinary purposes the following weaker solutions may be used:

I.		Parts.
Bichloride of mercury.....		1
Water (slightly salt).....		1,000

II.		
Carbolic acid.....		25
Fresh water.....		1,000

III.		
Formaldehyde (U. S. P.).....		50
Water.....		950

56. *Disinfection of materials.*—Materials shall be disinfected as follows:

Sheets, towels, linens, and white goods shall be disinfected by boiling for at least 10 minutes.

Bedding or woolen goods which can not be boiled should be disinfected by fumigation or soaked for two hours in one of the above disinfectant solutions.

China, glass, and crockery shall be disinfected by boiling for at least 10 minutes.

Furniture and woodwork shall be disinfected by wiping with a standard disinfectant solution.

Mattresses used by smallpox cases shall be burned.

Handkerchiefs, rags, and other materials of small value soiled with discharges from diphtheria, scarlet fever, or smallpox shall be burned.

## BURIALS AND FUNERALS.

57. The body of anyone dead from smallpox, scarlet fever, diphtheria, epidemic cerebrospinal meningitis, epidemic pneumonia, tuberculosis, typhoid fever, typhus fever, bubonic plague, Asiatic cholera, and leprosy shall be prepared for burial by washing or embalming the body with an approved disinfectant solution and completely enveloping it in a cloth or garments thoroughly saturated with such solution. The casket, coffin, or box containing a body with any of the above-mentioned diseases, after having once been sealed, shall not be opened for any purpose whatsoever, except by the express permission of the local health officer and under such conditions as he may prescribe.

58. *When public funerals are prohibited.*—Public funerals shall not be allowed for anyone dead of smallpox, scarlet fever, diphtheria, epidemic cerebrospinal meningitis, epidemic pneumonia, bubonic plague, Asiatic cholera, typhus fever, or leprosy.

**Schools—Sanitary Regulation. (Reg. Bd. of H., May 5, 1916.)**

28. *Air space and ventilation.*—Every building used for school purposes, public or private, shall comply with the State law regarding the amount of cubic space per pupil and amount of fresh air to be supplied (ch. 56, Acts of Assembly, 1908).

29. The air in any schoolroom shall be kept at all times in a wholesome condition and exercises shall be suspended as often as necessary in order to renew the air in any room the ventilation of which is defective.

30. *Sweeping and cleaning.*—No schoolroom shall be swept until all school exercises have been concluded for the day.

31. The floor of a schoolroom shall not be swept without first having been sprinkled with water or covered with damp sawdust, dustless floor powder, or damp paper, unless the floor has recently been oiled.

32. All sweepings must be removed daily from the schoolroom.

33. The furniture and woodwork of every school building shall be wiped down with an approved disinfectant solution whenever an infectious disease shall be found among the pupils.

34. *Drinking water.*—Every school, public or private, shall be furnished at all times, when in use, with an adequate supply of pure, fresh drinking water. This shall be running water wherever such water is available. If running water is not available, a tank or cooler shall be supplied, furnished with a spigot or bubbler or with a dipper, provided the dipper shall be used only for dipping the water from such tank or cooler and not for direct drinking.

35. *Individual drinking cups.*—If no satisfactory bubbling fountain be provided at the school, every pupil in attendance shall be required to have and to use an individual cup which shall be for his exclusive use. The use of the common drinking cup at any school is hereby forbidden under all circumstances.

36. *Source of supply.*—The well, spring, or cistern from which water is drawn for drinking purposes at the school must be safely protected against pollution.

37. *Sanitary privies at schools.*—Every building used for public-school purposes shall be furnished with two closets, one for males and one for females, separate as far as possible from each other and so arranged as to give the greatest possible privacy to persons using same. School buildings to which water and sewerage are available shall be provided with water-closets and connected with the sewerage system or with a satisfactory sewage disposal plant. Where water and sewerage are not available, buildings shall be provided with privies, in which the excrement shall not endanger a source of drinking water and shall not be accessible to flies and animals. Such privies shall be at all times maintained in a clean and sanitary condition. A urinal shall be provided at the privy for males.

**Water-Closets and Privies—Location and Maintenance—Disposal of Night Soil.**  
(Reg. Bd. of H., May 5, 1916.)

4. *Prohibition of soil pollution.*—Every house or other place used as human habitation in the State, every place of business and every pleasure, recreation, or construction camp, shall be provided with a decent closet or privy where human excrement is so disposed of that the excrement can not endanger a source of drinking water and can not be accessible to flies or animals.

5. No person, firm, or corporation shall maintain or permit on premises owned by him any arrangement for the disposal of human excrement which may possibly endanger a source of drinking water or be accessible to flies or animals.

6. No person shall deposit any human excrement upon the surface of the ground or in any place where it may be exposed to flies or animals.

**Hotels, Restaurants, and Lodging Houses—Screening Against Flies Required—Protection of Water Supply.** (Reg. Bd. of H., May 5, 1916.)

59. *Fly screens in hotels.*—The owner, proprietor, or lessee of every watering place, hotel, inn, or public lodging house in Virginia shall protect his kitchen and dining room against flies, by placing adequate screens in the windows and doors.

60. *Water supply of hotels.*—Every such owner, proprietor, or lessee shall protect from possible contamination the springs, wells, cisterns, or reservoirs from which the drinking water furnished the guests is drawn, by installing proper pumps, pipes, faucets or dipping devices which will attain this end.

**Churches, Theaters, and Other Buildings Used for Public Meetings—Cleaning and Ventilation—Spittoons.** (Reg. Bd. of H., May 5, 1916.)

46. *Ventilation and general sanitation.*—Every church, hall, theater, or other building used for public meetings shall be kept at all times in a clean and sanitary condition. Every such building shall be provided with proper means for maintaining the purity of the atmosphere while in use and such means must be employed at all times.

47. *Cleaning and dusting public halls, etc.*—All buildings used for public meetings shall be cleaned after each meeting held in them, such cleaning to consist of thorough sweeping of floors and wiping of woodwork, together with the opening of all windows and doors to permit the entrance of fresh air and sunshine. No such building or room shall be swept without first sprinkling the floor with water or throwing on it damp sawdust or other adsorbent material to prevent dust. Woodwork shall be wiped down with a damp cloth, and dry dusting with feathers or dry cloths shall not be practiced. In construing this rule, all meetings held during the course of a single day shall be regarded as one meeting.

48. *Expectoration in public halls, etc.*—An ample number of spittoons or cuspidors shall be furnished, which shall contain sufficient water to stand one-half inch deep on the bottom. They shall be emptied, washed, and disinfected with an improved disinfectant after each day's use.

**Railroad Coaches and Stations—Toilets—Cleaning and Disinfection—Spitting and Spittoons. Street Cars.** (Reg. Bd. of H., May 5, 1916.)

38. *Toilets in coaches.*—All railroad coaches used by passengers shall be provided with toilet facilities, which shall at all times be kept in clean and sanitary condition. The floors of all toilets shall be of impervious material and shall be washed with an approved disinfectant solution at the end of every run. The seat, hopper, and woodwork of these toilets shall be cleaned and washed with a disinfectant solution at the end of every run. Every closet shall be provided with proper ventilation sufficient to maintain the purity of the atmosphere.



39. *Cleaning and dusting.*—No railroad coach or street car shall be swept or dusted while occupied by passengers. All railroad coaches and street cars shall at all times be kept in clean and sanitary condition. Necessary cleaning may be done with a hand brush and dustpan if no dust is raised thereby. Sweeping shall be done only after sprinkling with water or covering the floor with damp sawdust or damp paper or other materials intended to prevent dust. Woodwork shall be wiped down with a damp cloth, and dry dusting with feathers or a dry cloth shall not be practiced. A vacuum cleaner is recommended wherever possible.

40. *Cuspidors, how kept.*—All spittoons or cuspidors shall contain sufficient water to stand one-half inch deep on the bottom. They shall be emptied, washed, and disinfected with an approved disinfectant at the end of every run.

41. All coaches shall be thoroughly cleaned, dusted, sunned, and aired at least once each month. Cleaning shall include the removal from the car of everything movable, thoroughly wiping down all woodwork, scrubbing the floors, dusting the carpets and seats, and fumigating the interior of the car as prescribed in the regulations on disinfecting.

42. *Expectoration on trains.*—Conductors, brakemen, and porters shall call the attention of passengers expectorating on the floor to the law prohibiting such expectoration and shall at once supply such passengers with cuspidors.

#### RAILROAD STATIONS.

43. *Cleaning and dusting.*—Waiting rooms, offices, and other portions of railroad stations shall at all times be kept in a clean and sanitary condition. All stations shall be thoroughly cleaned, dusted, and aired at least once each week. Cleaning shall include (1) thoroughly wiping down all woodwork with a damp cloth, and (2) scrubbing the floors. Sweeping shall not be done in the presence of waiting passengers except in stations which are open continuously. In such stations, sweeping shall be done only after sprinkling the floor with water or throwing on it damp sawdust or other absorbent material to prevent dust. Woodwork shall be wiped down with a damp cloth, and dry dusting with feathers or dry cloths shall not be practiced.

44. *Expectoration in stations.*—Sufficient cuspidors shall be furnished for the use of waiting passengers. All cuspidors shall contain sufficient water to stand one-half inch deep on the bottom. They shall be emptied, washed, and disinfected with an approved disinfectant at least once every day.

45. *Sanitary privies at stations.*—Every railroad station shall be provided with proper closets. Where water and sewerage are available, these shall be water-closets, connected with the public sewerage. Where water and sewerage are not available closets shall be so constructed and maintained that the excrement shall be so disposed of that it will not endanger a source of drinking water or be accessible to flies and animals. Privies shall at all times be kept in clean and sanitary condition.

#### Water Supply and Purification Systems—Preparation of Plans and Specifications for Submission to State Board of Health. (Reg. Bd. of H., May 5, 1916.)

1. *Date of application and required form.*—The information required by the State board of health in considering an application for a permit to supply water for drinking or domestic purposes to the public within the State of Virginia shall be submitted to the board at least two weeks in advance of the date on which it is proposed to begin work on the waterworks or extensions thereof and shall be submitted in the following scope and order:

- (a) Application for permit.
- (b) General and detail plans of proposed system or extension of existing system.
- (c) Engineer's report.
- (d) Specifications.



2. *Application for permit.*—The application for a permit and for the approval of plans shall be made by the individual, firm, institution, corporation, or municipal authorities for whom the work is to be done, or by their properly authorized agents; upon blank forms, which will be furnished by the health commissioner, said forms to be signed by the person, corporation, or officer applying for the permit and to be acknowledged before a notary.

3. *General and detail plans, form.*—One full set of general and detail plans shall be submitted with the application for a permit. Each plan shall be drawn to scale, shall be a true copy of the original, correct to date, and shall be a white, blue, or black line print or print from a reduced engraving. Pencil sketches will not be accepted. Copies of plans submitted will not be returned after submission unless revision is necessary or unless they have been presented for a preliminary review only. All copies of plans remaining in the hands of the board, after action thereon, are public records.

4. *Title of plans.*—In the lower righthand corner of each separate drawing shall be placed a proper title containing name of individual, firm, institution, corporation, or municipality for whom it is made, the name of the locality to which it refers, a proper description of the nature of the drawing, the scale, date, and the name of the consulting or designing engineer. On each plan showing the locality, distribution system, or street layout the points of the compass shall be indicated.

5. *General layout of proposed systems or extensions.*—The general plan or map for a proposed waterworks system or the extension of an existing system shall show the location of all pipe lines and special structures, such as intake, pumping station, purification plant, reservoir, etc., with sizes or capacities clearly indicated. The size of pipe mains shall be written along the pipe; the location of hydrants, valves, and any special structures shall be shown and referenced in a legend near the title; and elevations of the principal parts of the system, such as water at intake, pumping station, purification plant, reservoir, etc., shall be given. If any part of the system, such as pumping station or purification plant, is subject to flooding, the elevation of the highest known flood water shall be given.

6. *Details of special units or structures.*—Complete detail plans of all special units and structures, such as intake, pumping station, reservoir, blow-offs, conduits, etc. (except those of standard cast-iron pipe) shall be submitted. Profiles of long conduits or pipe lines by which water is brought from a distance, either by gravity or by pumping, shall be shown. All emergency connections and valves by which water can be turned into the distribution system from any auxiliary or industrial supply shall be shown in detail and location of each indicated on the general plan.

7. *Details of purification plants.*—Plans for purification works shall include a general drawing, showing the layout of the various units, together with the piping system and reserve areas or future extensions indicated. The detail drawings shall include longitudinal and transverse sections sufficient to show the construction of each unit and part of the plant, special devices for feeding chemicals, for draining units and such other information as is required for an intelligent understanding of the plans. Detailed designs of filter equipment submitted by filter companies, and made a part of the plans, shall be submitted for approval before construction of the plant begins.

8. *Details of wells and connections.*—Plans shall be submitted showing the depths and sizes of wells, the kind and depth of casing used, together with all connecting pipe, valves, etc., and the layout of pumping stations, together with the arrangement and size of all suction pipe, force mains, and valves.

9. *Engineer's report.*—A comprehensive report written by the designing or consulting engineer shall be submitted with the plans, said report to be typewritten upon letter-size paper (8½ by 11 inches). The report shall contain the principal data upon which the designs were based and also information relative to the source of supply and methods of purification, in particular as follows:

(a) *Surface supply without purification.*—Nature and approximate area of watershed with special reference to any possible source of the contamination of the supply and methods recommended to prevent such contamination. Storage capacity and approximate dimensions of reservoir or lake, character of water, etc., shall also be discussed.

(b) *Surface supply with purification.*—General character of water with special reference to sewage pollution of stream within a distance of 5 miles above the intake. The purification plant shall be described with reference to the capacity of the plant as a whole and the capacity of each unit, rates of operation of each unit, chemicals to be used and methods of application, any peculiar local conditions taken into account in the design, any special methods necessary in the maintenance and operation of the plant, and what degree of purification is expected or guaranteed.

(c) *Ground water supply.*—Full description of well or spring, nature of geological formation of the region, possible sources of contamination, means provided to prevent such contamination, character of the water, etc. Any available information or records of tests relative to the capacity or flow of the well or spring shall be given.

10. *Specifications.*—One copy of the detailed specifications covering all work to be done shall be submitted with plans for a new waterworks system or plans for the extension of or changes in an existing system. Specifications merely describing the general character of the work will not be accepted as sufficient. Specifications shall be on letter-size paper (8½ by 11 inches), except when printed in book form.

11. *Deviations from plans.*—There shall be no deviations from plans submitted to and approved by the board unless amended plans showing proposed changes shall be forwarded and approved by said board. Copies of approved plans, specifications, engineer's report, and application must be approved by and filed with the board before the contract is let.

**Barber Shops, Hairdressing Parlors, Public Bathhouses, and Manicurist and Chiropodist Establishments—Sanitary Regulation. (Reg. Bd. of H., May 5, 1916.)**

*Barber shops, hairdressers, etc.*—The following regulations shall be enforced for barbers and barber shops, hairdressers, hairdressing parlors, and public bathhouses:

61. No person with any disease of the skin of the face shall be shaved in a public barber shop.

62. Barbers must wash their hands thoroughly with soap and water before attending any person.

63. No alum or other astringent shall be used in stick form. If used at all to stop the flow of blood, it must be applied in the form of powder.

64. The use of powder puffs is prohibited.

65. No towel shall be used for more than one person without being laundered or sterilized.

66. The use of sponges is prohibited.

67. Mugs and shaving brushes must be thoroughly washed after use on each person.

68. Combs, razors, clippers, and scissors shall be thoroughly cleansed after every separate use thereof.

69. Floors must be swept or mopped every day, and all furniture and woodwork kept free from dust.

70. Running water shall be provided wherever it is possible to be had.

71. All bathtubs shall be thoroughly cleansed with soap and water after each separate use.

72. All tools or instruments used by barbers outside the shop in serving any person suffering from infectious or contagious diseases are required to be thoroughly and efficiently disinfected with 15 per cent formaldehyde or by boiling immediately after using the same.

73. No person suffering from any infectious or contagious disease, including tuberculosis or venereal diseases, shall serve any person in any barber shop, school, public bathroom or bathhouse, or hairdressing parlor in this State.

74. A copy of these regulations is to be hung in a conspicuous place in each barber shop, barber school, public bathhouse, and public bathroom, and in each hairdressing parlor in Virginia.

75. *Manicurists and chiropodists.*—No person with any disease of the skin, hands, or feet shall be treated by a public manicurist or chiropodist.

76. Manicurists and chiropodists must wash their hands thoroughly with soap and water before attending any person.

77. No alum or other astringent shall be used in stick form. If used at all to stop the flow of blood, it must be applied in the form of powder.

78. The use of powder puffs is prohibited.

79. No towels shall be used for more than one person without being laundered or sterilized.

80. The use of sponges is prohibited.

81. Floors must be swept or mopped each day, and all furniture and woodwork kept free from dust.

82. Running water must be provided wherever it is possible to be had.

83. All scissors, clippers, and other instruments and utensils shall be thoroughly cleansed after each separate use, either by being disinfected with a 15 per cent solution of formaldehyde or by boiling immediately after using.

84. No person suffering from any infectious or contagious disease, including tuberculosis or venereal disease, shall serve in any manicurist or chiropodist establishment.

85. A copy of these regulations shall be hung in a conspicuous place in every manicurist or chiropodist parlor or in any private establishment where the operator offers his or her services to the public.

## MUNICIPAL ORDINANCES, RULES, AND REGULATIONS PERTAINING TO PUBLIC HEALTH.

### GREENWICH, CONN.

#### Milk and Cream—Production, Care, and Sale. (Reg. Bd. of H., June 23, 1916.)

ART. 16. SECTION 1. On and after the 1st day of January, 1917, unless such time limit shall be extended by vote of the board of health either as to the whole of this article or any portions thereof, within the town of Greenwich no milk shall be produced for sale, sold, exposed for sale, or delivered, unless it is produced, handled, and marked in accordance with the provisions of this article. Milk produced outside the town of Greenwich shall not be sold, exposed for sale, or delivered within the town unless it is produced, handled, and marked in the same manner that is required within the town and unless the same inspection of its production and handling is permitted.

Milk which does not conform to the requirements of this article held for sale or offered for sale in said town may be sealed in the container by any inspector or other officer of the department of health authorized to inspect such milk, and such seal shall not be broken without permission of the said department.

The word "milk," wherever occurring in this article shall be interpreted as including cream, unless the contrary appears clearly from the context.

SEC. 2. *Dealers' licenses.*—Every person who sells or distributes milk to consumers in the town of Greenwich in greater quantity than 5 quarts per day shall be designated as a dealer. On and after the ——— day of ———, 1916 [sic], no dealer shall sell or distribute milk in the town of Greenwich without a license therefor from the department of health. This license shall be valid only for the term named in the license, must be renewed on or before the 1st day of January in each year, and may be suspended or revoked at any time for cause by the board of health after a hearing.

The application for the license shall be upon a form provided by the department of health and shall include the following statements:

1. Name and business address of applicant.
2. Kind of milk to be handled or sold.
3. Name of producers with their addresses.
4. Names of middlemen with their addresses.
5. A statement of the approximate number of quarts of milk, cream, buttermilk, and skimmed milk sold per day.
6. Sources of water and ice supplies (kind and location) at farms and bottling plants.
7. Written permission from the owners to inspect and score, as often as desired by the health officers, all premises, wherever situated on which milk is produced or handled.
8. An agreement (a) to abide by all the provisions of State and local regulations, and (b) not to handle or sell any milk except that from the producers named in the license until permission is granted by the department of health.

SEC. 3. Every license for the sale of milk, cream or ice cream of any grade or designation, in a store or other premises, shall be so conspicuously placed so that it may be readily seen at all times.

SEC. 4. Every conveyance used by a dealer for the delivery of milk to consumers, public carriers excepted, shall bear the owner's name, milk license number and business address in letters at least 3 inches in height.

SEC. 5. All premises in the town of Greenwich whereon milk is produced for sale or handled for sale or distribution shall be open to this department for inspection at any time. The owners of cows from which said milk is produced shall permit a veterinarian in the employ of this department to examine said cows at any time under penalty of having the supply excluded.

*Classification of milk and cream:*

1. Grade A raw.
2. Grade A pasteurized.
3. Grade B raw.
4. Grade B pasteurized.
5. Grade C pasteurized.

SEC. 6. All milk or cream sold or offered for sale in the town of Greenwich shall comply with the following requirements:

*Grade A raw.*—Grade A, raw milk or cream, shall be only that obtained from cows which have received a diagnostic injection of tuberculin, have not reacted, and are in good physical condition. Each cow added to the herd must have received such injection within six months and not reacted.

All cows shall be tested with tuberculin every 6 months, except where at the last test less than 2 per cent of the herd reacted, in which case the retest shall be made within 12 months. All reacting animals shall be immediately excluded from the herd and no milk from such cows shall be sold.

No dairy which, at the last scoring of said dairy by the health department scores less than 80, with a minimum of 25 on equipment and a minimum of 50 on methods, shall sell or mark milk as grade A raw.

At no time from the production until the delivery to the consumer shall the bacteria in grade A raw milk exceed 100,000 per c. c. and in cream shall not exceed 500,000 per c. c.

Grade A raw milk shall be delivered to the consumer within 36 hours after production.

Grade A raw milk shall be delivered to the consumer only in bottles or single service containers, except that 10 quarts or more be delivered in bulk in the following cases:

- (a) To establishments in which the milk is to be consumed or used on the premises.
- (b) To infant feeding stations which are under competent medical supervision.

The outer caps of said bottles shall be white, and said caps and containers of milk or cream of this grade other than bottles, shall display the words "Grade A Raw" and date of production, in black letters in large, heavy faced type, together with the name and address of the dealer delivering said milk or cream.

Grade A raw milk shall contain not less than 3.25 per cent of butter fat, and not more than 11.75 per cent of total solids.

Grade A raw cream shall contain not less than 18 per cent of milk fat.

2. *Grade A pasteurized.*—Grade A pasteurized milk or cream shall be only that obtained from cows which after semiannual physical examination are found to be healthy.

No dairy shall sell or mark milk or cream as grade A pasteurized unless at the last scoring of said dairy by this department it scores not less than 68 with a minimum of 25 on equipment and a minimum of 43 on methods.

Grade A pasteurized milk shall contain not more than 30,000 bacteria per cubic centimeter and cream not more than 200,000 bacteria per cubic centimeter at any time between pasteurization and delivery to the consumer.

No milk supply averaging more than 200,000 bacteria per cubic centimeter before pasteurization shall be pasteurized for sale under the designation grade A pasteurized.

Grade A pasteurized milk or cream shall be delivered to the consumer within 30 hours after pasteurization, and unless otherwise specified in the license shall be delivered to the consumer only in bottles.



The outer caps of bottles shall be white or nearly white, and said caps and containers of milk or cream of this grade other than bottles shall display in red letters in large, heavy faced type the words "Grade A pasteurized," "on (day) present week," and "a. m." or "p. m.," showing the time when the pasteurization was performed, and also the place of shipment and name of dealer delivering said milk or cream.

Grade A pasteurized milk shall contain not less than 3.25 per cent of butter fat and not less than 11.75 per cent of total solids.

3. *Grade B raw.*—Grade B raw milk or cream shall be obtained from cows which after annual physical examination are found to be healthy.

No dairy shall sell or mark milk or cream as grade B raw unless at the last scoring of said dairy by the health department it scores not less than 60, with a minimum of 20 on equipment and a minimum of 40 on methods.

At no time from the production until the delivery to the consumer shall the bacteria in grade B raw milk exceed 300,000 per cubic centimeter and in cream shall not exceed 1,500,000 per cubic centimeter.

Grade B raw milk or cream shall be delivered to the consumer within 36 hours after production.

The outer caps of said bottles shall be white, and said caps and containers of milk and cream of this grade other than bottles shall display the words "Grade B raw" and date of production, in brown letters in large heavy-faced type, together with the name and address of the dealer delivering said milk or cream.

4. *Grade B pasteurized.*—Grade B pasteurized milk or cream shall be only that obtained from cows which after annual physical examination are found to be healthy.

No dairy shall sell or mark milk or cream as grade B pasteurized unless at the last scoring of said dairy by the health department it scores not less than 55, with a minimum of 20 on equipment and a minimum of 35 on methods.

Grade B pasteurized milk shall contain not more than 100,000 bacteria per cubic centimeter and cream not more than 300,000 bacteria per cubic centimeter at any time between pasteurization and delivery to consumer.

No milk supply averaging more than 1,000,000 bacteria per cubic centimeter before pasteurization shall be pasteurized for sale under the designation grade B pasteurized.

Grade B pasteurized milk or cream shall be delivered to the consumer within 30 hours after pasteurization and, unless otherwise specified in the permit, shall be delivered to the consumer only in bottles.

Outer caps of bottles, and other containers of milk or cream of this grade, shall display in bright green letters in large heavy-faced type the words "Grade B pasteurized"; also "on (day) of present week" and "a. m." or "p. m.," showing the time when the pasteurization was performed and also name of dealer delivering said milk or cream.

Grade B pasteurized milk shall contain not less than 3.25 per cent of butter fat and not less than 11.75 per cent of total solids.

5. *Grade C pasteurized.*—Grade C pasteurized milk or cream shall be only that obtained from cows which, after annual examination, are found to be healthy.

Grade C pasteurized milk or cream shall be sold for cooking and manufacturing purposes only and shall not be delivered in bottles.

No dairy shall sell or mark its milk or cream as grade C pasteurized unless at the last scoring of said dairy by this department it scores not less than 40.

Grade C pasteurized milk shall contain not more than 300,000 bacteria per cubic centimeter and cream not more than 1,000,000 bacteria per cubic centimeter at any time before delivery to consumer, shall be delivered to the consumer within 48 hours after pasteurization, and, unless otherwise specified in the license, shall be delivered in cans.

Every container of grade C pasteurized milk or cream shall be conspicuously marked with the words "Grade C pasteurized" in bright blue letters in large heavy-faced type,



and shall have affixed thereto a tag or other mark displaying the words "Pasteurized (day) of present week," showing the day of pasteurization, place of shipment, and the name of dealer delivering said milk or cream.

Grade C pasteurized milk shall contain not less than 3.25 per cent butter fat and 11.75 per cent total solids.

*Skim milk and buttermilk.*—Every container of skimmed milk or buttermilk shall prominently display the words "skimmed milk" or "buttermilk," as the case may be, in white letters at least 2 inches high, on a bright yellow background.

SEC. 7. Milk or cream shall not be termed "pasteurized" unless it has been heated to a temperature of not less than 142° F. for not less than 30 minutes.

After pasteurization milk or cream must be cooled at once and placed in containers that have been properly cleansed, which containers shall be sealed immediately.

No license allowing the pasteurization of milk or cream shall be granted unless the equipment therefor conforms to the following requirements:

All heaters or pasteurizers used in the pasteurization of milk or cream shall be equipped with suitable automatic temperature-recording devices showing the temperatures to which the milk or cream has been heated at all times throughout the process of pasteurization.

The above records shall be kept in the pasteurizing plant and shall be open to inspection at all times by the department of health.

No milk or cream shall be pasteurized a second time before delivery to consumer.

SEC. 8. *General regulations.* 1. *Score cards.*—Dairies shall be scored by the department of health in accordance with standards prescribed by the board of health. Score cards and duplicate scores will be furnished on request.

2. No milk produced at any dairy which at the last scoring of said dairy by health department scored less than 40 shall be sold or offered for sale in the town of Greenwich.

3. Milk shall contain no visible foreign matter.

4. Milk shall be labeled with the date when produced at the place of origin.

5. Milk shall not be handled, stored, offered for sale, or sold in any stable, room used for sleeping purposes, or in any room or place which is unsanitary.

6. Samples of milk, cream, or ice cream shall be furnished to the department of health by any producer or dealer at any time, upon proper payment therefor. Upon request a similar sample shall be sealed and delivered to the dealer or producer.

7. No milk obtained from a cow within 45 days before or 3 days after calving, nor milk that has an unnatural odor or appearance, shall be sold or offered for sale.

8. Milk shall not be adulterated. The use in milk of any preservative or coloring matter, or addition of water, or any other foreign matter, is adulteration. Adulteration shall be sufficient cause for the exclusion of milk from the town of Greenwich.

9. As soon as milk is drawn from the cow, and before straining, it must be removed from the stable to a separate room. It shall be strained in a room separate from the stable and within two hours of the time of milking, cooled to 60° F., or below, by some method approved by this department. The above-mentioned room shall be properly ventilated and lighted and shall at all times be kept in a clean condition, securely screened from flies.

10. In the case of any herd which is found, when tested in accordance with these regulations, to be free from tuberculosis, or to have not more than 1 per cent of reactors, the next general test of the herd shall be made within 12 months. Any herd having more than 2 per cent of reactors shall be retested with tuberculin within 6 months. If more than 10 per cent of the herd react to the tuberculin test, the entire herd shall be retested with tuberculin upon expiration of 90 days and each animal so retested shall receive a double dose of tuberculin at this test. All tests for tuberculosis required in this article shall be made by a veterinarian approved by the board of health. A report of each test shall be made on a chart approved by the board of

health, which chart shall state (1) the kind and quality of tuberculin used in each test; (2) the dates and hours at which temperatures were taken, which temperatures shall be taken every two hours from the eighth to the twentieth hour, inclusive; (3) a description of the animals tested; (4) the numbers of the tags attached to the same; and (5) said report shall be signed by the veterinarian making the test and shall be filed with the board of health.

Certificates of veterinarians showing the results of all examinations shall be filed with the health department within 10 days after such examinations.

11. All food given to cows shall be clean and wholesome. The use of distillery slops is prohibited, and their presence on any dairy premises shall be considered sufficient cause for the exclusion of the milk from such dairies from sale or delivery in the town of Greenwich. Water supplied to cows shall be pure and free from contamination.

12. No hay or dry feed (other than grain) shall be fed to cows during milking or within 15 minutes prior thereto.

13. *Employees.*—All milkers and all other attendants handling milk in any dairy shall be personally clean. When entering upon their duties connected with the dairy their hands and outer garments must be clean. Milking shall be done only with dry hands and the hands shall be washed immediately before milking.

14. *Utensils.*—All pails, strainers, bottles, cans, and other apparatus used in handling milk must, immediately after using, be washed in hot water and some proper alkaline washing solution, rinsed with clean boiling water and stored in such manner as to remain clean until again used.

All metal containers and piping shall be in good condition at all times. All piping shall be sanitary milk piping, in couples short enough to be taken apart and cleaned.

15. The owner's name, license number, or other identification mark, the nature of which shall be made known to the health department, and the grade of milk therein shall appear in a conspicuous place on every milk container other than bottles.

16. No milk bottle or milk can shall be removed from a house in which there is or has been a case of communicable disease, until permission in writing has been granted by the health department.

17. All cans or receptacles used in the collection, sale, or delivery of milk or cream, when found to be in a condition unfit for such use, by reason of being worn or rusted, or in such condition that they can not readily be rendered clean and sanitary, shall be condemned by this department. Every such can or receptacle when so condemned shall be marked by a stamp, impression, or device showing that it has been so condemned and shall not thereafter be used by any person for the purpose of collecting, selling, treating, delivering, or shipping milk or cream.

18. Bottle caps before use must be protected from contamination.

19. The ice tubs in which milk or cream is stowed shall be painted inside and outside, and shall be kept clean at all times.

20. No person having or coming in contact with any communicable disease shall milk, or be allowed to milk, or handle milk utensils.

If at any time any person or persons having connection with a dairy, or with the handling of milk, or any resident or visiting member of the family of any person so connected, shall be stricken with any communicable disease, notice thereof shall be given to the department within 24 hours by the proprietor, and said department may order the sale of such milk discontinued for such time as it may deem necessary. No milk product from any such dairy or establishment for handling milk shall thereafter be sold, exposed for sale, or delivered in the town of Greenwich until such notice has been given and special permission therefor has been granted by this department.

21. All stables shall be provided with a clean, well-drained floor. Manure shall be removed before noon each day and disposed of so as not to be a source of danger to the

milk. This removal must not be done during milking time nor within one hour prior thereto.

22. Horse manure shall not be used in any cow stable for any purpose during the period from May 1 to November 1.

23. Bedding shall be clean, dry, and absorbent.

SEC. 9. *Receiving stations and bottling plants* shall be clean, well screened, and lighted, shall be used for no other purpose than the proper handling of milk and the operations incident thereto, and shall be open to inspection by the health department at all times.

They shall have smooth, impervious floors, properly graded and drained.

They shall be equipped with hot and cold water and steam.

Provision shall be made for steam sterilization of all utensils, and no empty milk containers shall be sent out until after such sterilization.

All utensils, piping, and tanks shall be kept clean and shall be sterilized daily. All piping shall be sanitary milk piping in couples short enough to be taken apart and cleaned.

Containers and utensils shall not be washed in the same room in which milk is handled, and shall be in good condition at all times.

SEC. 10. *Creameries* (included heretofore under the term dairy) shall be graded in accordance with a score card adopted by the board of health. No creamery scoring under 40 will be licensed.

SEC. 11. *Stores*.—All stores in which milk is handled shall be provided with a suitable room or compartment in which milk shall be kept. Said room or compartment shall be clean and so arranged that the milk is protected from contamination.

Milk or cream shall not be stored, handled or sold in any stable or in any room used for domestic purposes or in any room which communicates directly with any such stable or such room, or in any room in which there is a water-closet.

Milk or cream shall be stored only in a proper cooling or refrigerating room or receptacle, which shall be kept at a temperature not exceeding 50°.

SEC. 12. *Equipment*.—All rooms shall be maintained in a cleanly and sanitary condition and free from vermin. Spitting within such rooms is prohibited.

SEC. 13. Determination of bacteria in milk and cream under this article shall be made according to methods and with media approved by the health department. Whenever a sample of milk or cream is taken for determination of bacteria, a similar sample shall be sealed and delivered to the dealer or producer upon his request. Any dealer or producer who disputes a determination of bacteria made by the department of health shall be given a hearing before the board of health.

#### **Midwifery—Practice of—Permit Required. (Reg. Bd. of H., May 8, 1916.)**

ART. 17. SECTION 1. No person other than a duly authorized physician shall engage in the practice of midwifery without a permit from the board of health. No permit will be granted unless the application made on the printed form issued by the board has been filed with the department of health and evidence furnished that the applicant has complied with the State laws.

SEC. 2. Any person who shall practice midwifery in the town of Greenwich in violation of any regulations or rules promulgated by the department of health shall be guilty of a misdemeanor.

#### **LITTLE FALLS, N. Y.**

#### **Milk and Cream—Sale of—Containers. (Res. Bd. of H., Mar. 7, 1916.)**

*Resolved*, That no person, persons, firm, or corporation shall sell, offer for sale, or keep for sale any milk or cream, in any shop or other place, or street, in the city of Little Falls, N. Y., unless the same is sold, exposed, offered, or kept for sale, in steril-

ized capped bottles or receptacles which have been filled and capped by the person, persons, firm, or corporation having a milk dealer's permit and in the manner and place hereinafter required.

Milk or cream shall not be sold, offered, or exposed for sale or delivered in any place in the city of Little Falls, N. Y., except in sterilized capped bottles or receptacles, which bottles or receptacles shall have been filled and capped only at the milk house of the dairy or dealer having a dealer's permit, approved by the health officer of the said city of Little Falls, N. Y. Each cap so used shall have printed upon it the grade of milk contained in said bottle, and the name and address of the dealer in colored type as prescribed by the State sanitary code.

When milk is sold to establishments such as hotels, restaurants, lunch rooms, bakeries, soda fountains, and barrooms to be consumed on the premises it may be delivered in sealed sterilized cans, provided that the amount so delivered is not less than 20 quarts at one delivery, and that said cans have been filled and sealed only at the milk house of the dairy or dealer having a dealer's permit.

Any person, persons, firm, or corporation violating any provision of this section shall forfeit and pay to the city of Little Falls, N. Y., a penalty of \$25 for every such violation, and the health officer shall revoke the dealer's permit granted to such person, firm, or corporation.

*Resolved*, That the term "sterilization," as used in the order and regulation passed at a meeting of this board on March 6, 1916, governing the bottling and delivery of milk and cream, shall mean the cleansing with boiling hot water or steam in conformity with the regulations and provisions of the sanitary code of the State of New York.

This order and regulation shall take effect on June 1, 1916.

#### LOS ANGELES, CAL.

##### **Common Towels—Prohibited in Public Places. (Ord. 33783, Feb. 24, 1916.)**

SECTION 1. That no person, firm, association, copartnership, or corporation owning, in charge of, or in control of any lavatory or wash room in any hotel, restaurant, factory, store, office building, school, public hall, railway station, or public place or building in the city of Los Angeles shall maintain or keep in or about any such place hereinbefore mentioned any towel for common use, nor shall they expose for use or allow to be exposed for use any towel to be used by more than one person, such as is now known as a "roller towel."

For the purposes of this ordinance the term "common use" shall be construed to mean for use by more than one person.

SEC. 2. Any person, firm, association, copartnership, or corporation violating any of the provisions of this ordinance shall be deemed guilty of a misdemeanor and upon conviction shall be punished by a fine of not less than \$5 nor more than \$25, or by imprisonment in the city jail for a period of not less than 5 days nor more than 25 days, or by both such fine and imprisonment.

This ordinance shall become effective and be in full force and effect from and after 6 months from the date of its passage.

#### MOBILE, ALA.

##### **Flies—Traps Required Near Stables and Places where Food is Produced or Sold. (Ord. Mar. 9, 1916.)**

SECTION 1. That each person, firm, association, or corporation, who shall operate, conduct, or maintain a restaurant, cook shop, butcher shop, fish house, or oyster house shall provide, maintain, keep in place, and keep baited a fly trap outside of and within 15 feet of each door that enters into such restaurant, cook shop, butcher shop, fish house, or oyster house.

SEC. 2. That each person, firm, association, or corporation who shall operate, conduct, or maintain any stable where any horse or cow is kept shall be required to provide, maintain, keep in place, and keep baited a fly trap, either within or without such stable and not more than 5 feet from each door that enters thereto.

SEC. 3. That each fly trap required by this ordinance to be provided shall contain not less than 2,160 cubic inches of space; that each such fly trap shall, by the person by whom it was provided, be kept baited with fish, meat, molasses, or other food-stuff attractive to flies, and all flies caught in each trap by the person by whom said trap was provided be destroyed daily.

SEC. 4. That each day's failure to comply with this ordinance shall constitute a separate offense, and any person, firm, association, or corporation who shall violate any provision of this ordinance shall be fined not less than \$1 nor more than \$10, as the recorder may impose, for each violation of said ordinance.

### MONROE, LA.

#### **Meat and Fish—Sanitary Regulation of Places Where Sold. Municipal Slaughterhouse—Construction of. (Ord. 2070, Jan. 17, 1916.)**

SECTION 1. That the city board of health be, and it is hereby, authorized to issue a permit for the construction of a slaughterhouse within the city of Monroe, or a place near by, the location to be approved by the city board of health and the slaughterhouse to be under the control of the city authorities, to be known as the municipal slaughterhouse, the same to be constructed in accordance with the rules and regulations of the State board of health and in accordance with such rules and regulations as may be imposed by the city board of health.

SEC. 2. That from and after the construction of the slaughterhouse provided for in section 1 and the acceptance of same by the city board of health, all animals, the carcasses of which are to be used for foods, shall be slaughtered therein under the direction of the city meat inspector, and the fees or charges for maintaining such slaughterhouse shall be as follows; For beeves, 75 cents each; calves, 25 cents each; hogs, 50 cents each; sheep and lambs, 15 cents each; goats and kids, 15 cents each.

SEC. 3. That from and after the construction of said slaughterhouse and acceptance or approval of same that all meats and fish, before being offered or exposed for sale, shall be delivered at said slaughterhouse, or other place designated by the city board of health, to be inspected by the inspector of meats, and shall not be put on sale until so inspected and tagged by said inspector.

SEC. 4. That all vehicles, in which meat or fish is handled, after being inspected and tagged, shall be so constructed as to protect the meat or fish from flies, dust, and other extraneous matter and maintained in a sanitary condition.

SEC. 5. That all meat markets, fish markets, butcher shops and stalls shall be kept sanitary and protected from flies, dust, and other contaminations, and all scraps, bones, and other refuse shall be kept in a closed receptacle, which must be emptied at least once daily. Meats on sale shall be kept in iced refrigerators or iced chests, except in such small quantities as are used in the daily retail business.

SEC. 6. That before any animal is slaughtered for food purposes, it shall be submitted to the meat inspector, who shall examine the animal both before and after slaughter.

SEC. 7. That the carcasses of any and all animals slaughtered outside of the city of Monroe shall, before being carved or cut, be submitted to the meat inspector for proper inspection thereof, and the person or persons furnishing said carcasses shall give said inspector all required information as to where and when and the condition under which the animal was slaughtered; and no part of such animal shall be offered for sale until so inspected and a permit issued by said inspector for the sale thereof.



SEC. 8. That any farmer or other person desiring to sell meat on the streets of the city of Monroe shall, before offering the same, have it inspected by the meat inspector, and in order to assist in such inspection, the carcasses of all animals must contain the heart, liver, kidneys, and lungs, and the charge of the inspector for inspecting such animals brought in by farmers or others, and all other animals and carcasses inspected at slaughterhouse or other place shall be: Beeves, 10 cents each; yearlings under 200 pounds, 10 cents each; calves, hogs, shoats, pigs, sheep, lambs, goats, and kids, 5 cents each; fish, per 100 pounds, 10 cents.

SEC. 9. That the slaughterhouse keeper shall, when necessary, furnish, free of charge, pasturage for 10 days for 10 head of cattle.

SEC. 10. That if any person violates any of the sections or provisions of this ordinance he shall be fined not less than \$5 nor more than \$50, and in default of payment of said fine he shall work the same out on the public streets and alleys or other public work of the city of Monroe at the rate of \$1 per day for each day of labor performed.

### MORRISTOWN, N. J.

#### Milk and Cream—Production, Care, and Sale. Ice Cream. (Reg. Bd. of H., Apr. 10, 1916.)

SECTION 1. No person, firm, or corporation shall sell or deliver or have in possession for sale or delivery in the town of Morristown any milk or cream without first obtaining from the board of health a permit for such sale or delivery. All permits shall expire on the 1st day of September of each year and shall be issued for a period of one year or fraction thereof. Each applicant for a permit shall state in writing the grade or grades of milk and cream he proposes to sell.

SEC. 2. No permit, as required in the section preceding, shall be issued by the board of health until there shall be paid to the said board of health for the issuing thereof and for a proper inspection and supervision of the sale of the milk the sum of \$2, and until the applicant shall have signed an agreement to observe faithfully the requirements of the board of health as set forth in this ordinance.

SEC. 3. Each permit or license to be granted as set forth in the two sections next preceding may be revoked at the discretion of the board of health if any person, firm, or corporation so licensed as aforesaid, or any of his or its employees, servants, or agents, shall violate any ordinance or rule of the board of health relating to the sale, distribution, or inspection of milk.

SEC. 4. All persons, firms, or corporations engaged in the sale of milk within the town of Morristown shall furnish to the said board of health a true statement in writing, upon blanks to be supplied by said board of health, setting forth a full and complete list of the names of persons, firms, or corporations from whom said milk was purchased, together with their full addresses and a statement of the locality in which said milk is produced; also full information as to the source of his or its water or ice supply; also, when so requested by this board or any of its officers or agents, they shall furnish the names and addresses of all persons and customers to whom said person, firm, or corporation may sell or deliver milk within said town, and said blanks when filled in as aforesaid shall be signed by the person, firm, or corporation selling said milk to whom said blank shall be tendered. If it shall appear that the source of any water or ice supply is unsatisfactory, this board may order such supply discontinued.

SEC. 5. All persons, firms, or corporations engaged in the sale of milk within the town of Morristown shall notify the board of health in writing, one week before changing or adding to the source of supply of the milk so sold by him or them within said town, of such intended change, and said notice shall also state the name or names of the producers supplying said milk and the locality from which said milk is to be



procured. Such change or addition shall be made only by permission of two members of the board on the recommendation of the dairy inspector.

Any person, firm, or corporation who is licensed to sell milk or cream in the town of Morristown shall immediately withdraw from the town any supply upon notification from the board of health that the producer of such supply has failed or refused to comply with any of the requirements that are or hereafter may be required of milk producers, or that such supply is under suspicion as a carrier of contagious or infectious disease.

SEC. 6. No milk shall hereafter be produced, sold, exposed for sale, or delivered within the town of Morristown unless it is produced and handled in accordance with the requirements of this ordinance.

If at any time any person or persons having any connection with a dairy from which milk is delivered or sold or offered for sale in the town of Morristown, or any resident member of the family of any person so situated, shall be stricken with cholera, smallpox (including varioloid), septic sore throat, diphtheria, membranous croup, yellow, typhus, typhoid, or scarlet fever, measles, tuberculosis, syphilis, or any other communicable disease that may hereafter be declared by this board to be dangerous to the public health, notice shall be given to said board of health immediately by the owner or owners of such dairy, and no milk produced from the dairy of any person, firm, or corporation failing to give notice herein required shall hereafter be sold or exposed for sale or delivered in the town of Morristown until special permission has been granted by said board.

Whenever a case of scarlet fever, typhoid, diphtheria, measles, or tuberculosis is reported to this board notice shall be sent to the milk dealer supplying the house from which such disease was reported, and from that time until permission is given by the board no bottles may be left at such house, but the milk shall be poured from the bottles into a container supplied by the purchaser. Any bottles at the house at the time of notification shall not be taken away until permission is given by the board of health.

No tickets may be used more than once.

Everything about farms, stables, dairies, milk wagons, and milk depots of dealers doing business in the town of Morristown, or of producers supplying milk used in said town, must at all times be open to inspection of the board of health, its officers, and agents, and must be kept absolutely clean and in the best sanitary condition.

SEC. 7. Milk kept for sale in any store, shop, restaurant, market, bakery, or other establishment in the town of Morristown shall be kept at a temperature not exceeding 50° F. in a covered cooler box or refrigerator properly drained and cared for, which shall at no time be allowed to become foul or malodorous through the lack of proper cleaning. Said store, shop, restaurant, market, bakery, or other establishment shall at all times when business is being carried on be open to inspection by any member of this board or its authorized agent. No store may sell dipped milk, but only milk in original bottles.

Any person, firm, or corporation selling or delivering milk in the town of Morristown by means of a wagon or other vehicle must have the name of such person, firm, or corporation and the license number plainly lettered on each side of said wagon or vehicle.

All milkers and attendants employed in any dairy the milk from which is to be sold or offered for sale or delivered in said town shall be personally clean and no milk shall be sold or delivered or exposed for sale in said town produced from dairies wherein the foregoing regulations are not enforced.

The board of health may at any time demand samples of milk and cream from any dealer.

All dairies shall be scored in accordance with score card adopted by State department of health or other score card to be adopted by this board and the board of health reserves the right to publish these scores as it sees fit.

The water supply used for watering cows or for washing utensils or hands of milkers or for cooling milk must be free from contamination. The board may have an analysis made at any time.

SEC. 8. All cows must be healthy as shown by physical examination by a registered veterinary and by tuberculin test applied yearly as hereinafter required. All reactors and those suffering from any contagious ailment must be at once removed from the herd. If ailment is of a temporary nature, such cattle may be reinstated on certificate of restored health by a competent veterinary, such certificate to be filed with the board of health.

Flanks and hind legs of cows must be thoroughly cleaned twice daily, but not within one hour before milking. Udders must be washed with clean cloth and clean water and then wiped with dry clean cloth before each milking.

The hands and udders must be kept dry during milking, and the first two streams of milk from each teat shall be rejected.

All bedding for cows must be dry and clean and soiled bedding must be removed daily. All food given to cattle shall be fresh, sweet, and wholesome.

No milk shall be sold or offered for sale or distributed in the town of Morristown unless the cows from which it is obtained have within one year been examined by a veterinary whose competency is vouched for by the State veterinary association or other proper authority; and no license for the sale or delivery of milk within the limits of the town of Morristown shall be issued to any person, firm, or corporation unless the applicant for such license has filed with the board of health a certificate of such veterinary that said cows have been tested with tuberculin. Such certificate shall be accompanied by charts showing the reaction of each individual cow of the herd and a license may be withheld or revoked unless it shall appear to the satisfaction of the board that all cows which react have been removed from the premises occupied by the herd. If more than 10 per cent of the herd react, the entire herd shall again be tested at the expiration of six months.

No cows may be added to the herd of any licensee unless certificates of satisfactory tuberculin tests of said cows have first been filed with the board of health.

If the board shall feel dissatisfied with the result of any tuberculin test, it may require the herd in question to be retested (after sufficient time has elapsed). If the retest shows that the former test was untrustworthy, the owner of the herd shall pay for the retest, otherwise the board shall pay for the same. If two or more of the retests aforesaid shall show previous tests to have been unreliable, the veterinarian whose tests have been twice disproved may be debarred from testing herds supplying milk to the town of Morristown.

SEC. 9. The tuberculin test required by this ordinance should be made in the following manner: Two preinjection temperatures shall be taken at intervals of 2 or 3 hours. The first postinjection temperature shall be taken not later than 12 hours after injection. Thereafter temperature shall be taken at intervals of 2 hours, continuing until not less than 18 hours after injection. A rise of 2° F. above the highest preinjection temperature shall be considered a reaction, provided such rise of temperature can not be shown to be due to some other cause.

SEC. 10. Cow stables must be cleaned daily and must be whitewashed as often as required by board or its agents, and not less than once every six months, unless constructed of smooth cement or painted. Every cow stable must be separate from horse stables and must be used for no other purpose than stabling cows.

Cow stables must have tight ceilings over stanchions and 15 feet beyond in every direction or to partitions if ceiling space is less than 15 feet. Ceilings must be kept clean and free from cobwebs and all other accumulations. This board may require ceilings to be painted at its discretion.

Cow stables shall have at least 2 square feet of unobstructed window glass per 500 cubic feet of air space, the windows to be arranged so as to light all portions of the stable effectively, the panes to be washed and kept clean.

Each cow shall have at least 3 feet in width of floor space when fastened in stanchions, and in all cases where no adequate artificial means of ventilation is provided each animal shall have air space of at least 600 cubic feet.

All stables shall be provided with a tight, dry floor, and the manure drops or urine gutters shall be water-tight and shall be thoroughly cleaned at least twice each day.

SEC. 11. Manure must not be stored within 50 feet of cow stable nor where the cattle will have access to it, and must be removed at least once a week. No open drains for stable liquids or stagnant pools of water within 100 feet of stable or milk house or cooling room will be allowed.

No garbage or waste animal or vegetable matter shall be allowed to accumulate within 100 feet of stables or milk house or cooling room. Yards must be well drained.

SEC. 12. All pails, cans, bottles, or other receptacles or holders of milk must be thoroughly washed with clean water from a source adequately protected from contamination, soap, and washing soda and then sterilized by live steam or by boiling within one hour before being used.

Utensils badly worn, rough or rusty, or otherwise unsuitable may be condemned by this board or its agent, at discretion, and may not then be used.

No pail shall be used during the process of milking which has a top opening of a diameter greater than 8 inches. The inner surface of all milk pails and utensils shall be smooth and heavily tinned. All seams must be soldered flush.

SEC. 13. Milk must not be strained in stable, but in room or building used for no other purpose, which must be at all times kept clean, sweet, and sanitary and well ventilated and must be effectively fly screened from April 1 to November 1. No utensils or articles not used in handling of milk shall be kept in this room.

Milk or cream shall not be handled, stored, offered for sale, or sold in any stable, room used for sleeping purposes, in any room or place which is dark, damp, poorly ventilated or insanitary or in which rubbish or useless material is allowed to accumulate, or in which there are offensive odors; and no utensils used in the handling of milk or cream shall be handled, stored, or kept in any stable, room used for sleeping purposes, or in any room or place which is damp, dark, poorly ventilated, or insanitary, or in which rubbish or useless material is allowed to accumulate, or in which there are offensive odors.

No milk shall be delivered from dairies that score less than 25 per cent for equipment and 45 per cent for methods by score card adopted by this board. If any dairy which has been selling milk in accordance with this section shall upon visit of inspection score less than these requirements such dairy shall be at once debarred from selling milk until a subsequent inspection shall make it clear that the score is again up to the standard required.

No milk shall be sold in the town of Morristown which is obtained from a dealer who handles in part a supply not approved by this board, and no person, firm, or corporation shall deliver or offer for sale in the town of Morristown any milk unless the entire supply which he handles complies with the requirements hereinbefore set forth, unless satisfactory evidence is given this board that the two supplies are kept separate. No milk or cream shall be sold in the town of Morristown unless the container in which it is delivered has plainly marked thereon the name of either the producer or the vender of the milk or cream.

No milk or cream that contains any appreciable amount of sediment or foreign matter shall be sold, offered for sale, or delivered in the town of Morristown, regardless of whether or not the bacteria count exceeds the limit set by this section. "Appreciable amount of sediment" shall be construed to mean anything more than a few minute particles in a quart of milk.

All milk must be delivered to consumers in bottles which must remain intact from the time they are first filled until they reach the consumer. But this board may from time to time, by resolution, allow milk to be delivered in cans to manufacturers and bakers and institutions to be used only for manufacturing, baking, and cooking purposes, this board to reserve the right to withdraw such privilege at any time.

The board of health may, from time to time, when in its opinion the public interest may require, permit, by resolution, the sale of milk that is produced under conditions other than as herein specified, provided that a written statement signed by the consumer be filed with the board stating that such milk or cream will be used only for cooking purposes.

No bottles shall be filled on wagons, and no dipped milk shall be sold at any time or place.

All milk must be cooled to a temperature of 50° F., or lower, within two hours after milking, and kept at this temperature until delivered to consumers.

Milk shall not be sold from any cow that has calved within 5 days nor from any cow within 30 days of normal time of calving.

No preservatives or other foreign substance shall be added to milk.

All milk bottles must be truly labeled, "Certified," "Grade A," "Grade A pasteurized," or "pasteurized."

All caps used on milk bottles shall be approved by the board of health as to type before being used.

SEC. 14. The following grades are hereby established for milk to be supplied in the town of Morristown:

(1) *Certified*.—Must be certified by an association competent to certify, in accordance with act of legislature approved April 22, 1909.

(2) *Grade A*.—May be pasteurized. If raw must have bacterial count of less than 60,000 per c. c. for milk and 300,000 for cream at time of delivery to consumers. Grade A pasteurized, 10,000 for milk and 50,000 for cream. All grade A milk must be produced under the following requirements.

All milkers and handlers of milk must be examined by a competent physician, who must certify them to be free from contagious diseases and must certify that stool tests for typhoid bacilli have been made by a competent bacteriologist three times at intervals of one week with negative result. The Widal test must also be applied by said physician. Reexaminations require stool tests and Widal test only once annually.

Such certificate shall be furnished this board during August, 1916, and thereafter in November, March, May, and August of each year.

But the board may require such examination at any time, and all new milkers and handlers of milk must furnish these certificates before taking up such duties. Any milker or handler of milk who is ill from any cause shall be immediately excluded from the dairy and notice thereof be sent to the office of the board of health and he shall not resume his duties until permission is given by this board on receipt of a certificate signed by a regularly licensed physician showing freedom from illness.

No open privy or overflowing cesspool shall be allowed within 500 feet, or pigpen within 300 feet, of any milking stable on premises where grade A milk is produced. Stable yards on such premises shall be kept clean and the manure removed to at least 200 feet from stable.

Milkers to wear clean washable suits of light color. Hands must be washed with soap and water before each milking and dried on clean towel.

All grade A dairies must score not less than 55 per cent for methods and 30 per cent for equipment.

Overshield caps must be used, of a pattern approved by the board, and capping must be done by machine or by operator wearing sterilized rubber gloves.

(3) *Grade B*.—All milk other than certified and grade A which complies with requirements shall be pasteurized in accordance with section 15, and constitutes grade B.

The bacteria count after pasteurization shall not exceed for milk 30,000 and for cream 150,000.

Milk and cream must be delivered to consumer within 24 hours of pasteurizing.

SEC. 15. Pasteurization must be done at a temperature of 145° F. to be maintained 30 minutes. All apparatus used for this purpose must be approved by this board.

All pasteurizing apparatus must be equipped with an automatic time and temperature recording device and the daily records shall be kept on file for a period of one month and shall be exhibited to any agent of this board upon request. Bottles shall be plainly labeled "Pasteurized," and plainly dated with date of pasteurization.

The apparatus used for pasteurizing must be taken apart every day and thoroughly cleaned and sterilized with live steam or boiling water.

Milk must be bottled and capped immediately after pasteurization on the same premises. Caps shall be approved by this board and shall be adjusted either by machinery or by person wearing sterilized rubber gloves.

All cream, skimmed milk, and buttermilk must be pasteurized unless they are either made from previously pasteurized milk or conform in all respects to requirements for certified or grade A milk.

No milk shall be pasteurized more than once.

SEC. 16. All persons engaged in the sale of ice cream in the town of Morristown shall file with this board before the 1st day of June of each year a true statement of the place where the milk and cream to be used is produced or of the place of manufacture and from whom said ice cream is purchased. All premises where ice cream is manufactured for sale in the town of Morristown shall be kept in a thoroughly sanitary condition and shall be open to this board for inspection at any time. No refrozen ice cream nor any ice cream, one or all of the various ingredients of which could not be sold separately under this ordinance, shall be sold or offered for sale in the town of Morristown except as follows:

The board of health may, from time to time, when in its opinion the public interest may require, permit, by resolution, the sale of ice cream that is manufactured from milk and cream that could not legally be sold as milk and cream provided that a statement be filed with this board setting forth the source of supply of the milk and cream used and guaranteeing that all such milk and cream will be boiled before being frozen. Such permission may be withheld if the source of such milk and cream is not satisfactory to this board.

No person shall sell or offer for sale in the town of Morristown any ice cream that contains over 500,000 bacteria per cubic centimeter, measurement to be made immediately after the ice cream has been reduced to a fluid condition.

SEC. 17. No butter, cheese, pot cheese, or other product made wholly or in part from milk the sale of which has been forbidden in the town of Morristown, shall be sold in said town.

SEC. 18. All caps used on bottles as required in this ordinance shall be kept in a clean and sanitary place properly protected from dirt and dust. When date is placed on caps, dating shall be done after cap has been put on bottle.

SEC. 19. Any person, firm, or corporation who shall fail to comply with or shall violate any of the provisions of this ordinance shall, on conviction, be punished by a fine of not less than \$10 nor more than \$100 in the discretion of the court or magistrate before whom the complaint is made.

SEC. 20. The provisions of the sanitary code of the board of health of the town of Morristown approved December 10, 1906, regulating the production and sale of milk for use in Morristown, N. J., are hereby repealed, such repealer to take effect on August 31, 1916.

SEC. 21. This ordinance shall take effect on the 1st day of September, 1916, except as otherwise herein provided.